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UNITED STATES DEPARTMENT OF COMMERCE

IL01/35

United States Patent and Trademark Office

4

January 16, 2001

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APPLICATION NUMBER: ***60/176,215***
FILING DATE: ***January 14, 2000***

PRIORITY DOCUMENT

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H. L. JACKSON
Certifying Officer

01-18-00

A/P or V

PROVISIONAL PATENT APPLICATION TRANSMITTAL

This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53(b)(2).

Docket Number	SANF-24200.USA (P-0)	Type a plus sign (+) inside this box ->	+

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TITLE OF THE INVENTION (280 characters max)

ADVERTISEMENTS IN AN END-USER CONTROLLED PLAYBACK ENVIRONMENT

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ENCLOSED APPLICATION PARTS *(check all that apply)*

x	Specification	*Number of Pages*	65			Small Entity Statement
x	Drawing(s)	*Number of Sheets*	20			Other (specify):

METHOD OF PAYMENT *(check one)*

x	A check or money order is enclosed to cover the Provisional filing fees.	PROVISIONAL FILING FEE AMOUNT(S)	$150.00
X	The Commissioner is hereby authorized to charge any additional filing fees and credit Deposit Account Number: 12-1420		

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government

- [ ] No.
- [ ] Yes, the name of the U.S. Government agency and the Government contract number are:

Respectfully submitted,

SIGNATURE: ______________________ Date: January 14, 2000

TYPED or PRINTED NAME: Joel G. Ackerman REGISTRATION NO. *(if appropriate)*: 24,307

CERTIFICATION UNDER 37 CFR §1.10

I hereby certify that this New Provisional Application and the documents referred to as enclosed herein are being deposited with the United States Postal Service on this date January 14, 2000, in an envelope bearing "Express Mail Post Office To Addressee" Mailing Label Number EL151572504US addressed to: Box Provisional Patent Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

SIGNATURE: ______________________ Date: 1-14-00

HOWARD WONG

SECTION 1.

I-185 Patent Proposal

Automated Targeting and Provisioning of Advertisements in an End-User controlled playback environment

Classification: **Secret**

Distribution: **Controlled**

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Writer: Avi Solomon
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Automated Targeting and Provisioning of Advertisements in an End-User controlled playback environment

Table of Contents

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1. Introduction

Currently, broadcast content is marketed using two major business models:

- Providing free content to the end user by selling Ad time on the broadcast channel to business clients interested in promoting their products and services. This model is exemplified in commercial broadcast services.

- End user subscription to broadcast channel or event, paid for by the end-user. This model is characterized by very limited ad provisioning.

The free content model is used by advertisers to target mass audiences. This model is limited in that advertisers target their audiences based on program content and channel proximity and do not receive any direct feedback on ad impact.

In the subscription model, the service provider usually possesses a detailed profile of the end user. This information cannot usually be used for direct marketing since advertising opportunities have been preempted by the subscription service provider.

2. The Problem

The free content and subscription models are similar in that in both the broadcast service provider unilaterally determines and fixes the content to be received by the viewer without any real choice on the viewer's part.

Recently, advances in digital broadcast technology and services have allowed the introduction of end-user interactivity and choice along with enhanced data storage capabilities in end-user devices.

The end-user can now use the storage and programming capabilities on his playback device to create personalized 'virtual' channels and customize playback to suit personal consumption patterns. The end user can now combine content and create unique playlists of favorite contents. Digital broadcast technology has provided almost unlimited choice and interactivity to the end-user.

The problem is that there exist no new advertisement targeting and provisioning business models which are designed to deal effectively with the new concerns of end-user interactivity, end-device content storage, playback choice and secure ad broadcast to specific market segments. A need exists for a system that will simultaneously enforce free and paid content broadcast models and ensure intelligent ad delivery and playout.

The invention solves this problem and provides intelligent targeting and provisioning of advertisements for interactive digital broadcast media.

3. The Solution

Modern digital data broadcast services and end-devices need ad provisioning capabilities for three classes of contents:

- Paid Content (Limited content based ad targeting)
- Free Content (Direct content based ad targeting)
- 3rd Party Content (Default ad targeting)

The invention is an automated advertisement targeting and provisioning system that targets and assigns advertisements playouts based on electronic business strategy and user profile databases. Each device can be set with different ad playout thresholds in accordance with marketing strategy and end-user authorization.

The invention interacts with the end-device via a 2 way unicast or broadcast connection with a return path and automatically manages ad provisioning and sets playout priorities on the end-device. The invention provides secure, end-user invisible download of ads and guards against illegal attempts to circumvent ad playback.

The invention provides accurate and intelligent targeting of specific market segments and ensures secure utilization of ad resources.

The invention is described in the following best mode implementation.

4. Best Mode

The invention can be implemented as a content store on an internet-based web site accessible via the end-user PC's or by the end-device using a direct modem connection Another access option is a broadcast channel where all paid and free content are offered in broadcast mode to all subscribers

Upon purchase of the end-device, the end-user is authorized to access and subscribe to free and paid content either at the content web site or a on the broadcast channels subject to specific business agreements.

Content (for e.g.: audio or video files) is stored at the web site server database or broadcast continuously over the broadcast medium (satellite, cable or terrestrial). Each content file has specific advertisement metadata labels and points tagged to it. Ad parameters incorporate ad agency contract preferences, categories that enable advertisement association and advertisement points that determine when the next advertisement will take place (the higher the advertisement points, the sooner the next advertisement slot).

4.1. DESCRIPTION OF INVENTION

Off-line, the ad manager manages many separate advertisers in entitling them to enter various ads into the system. For instance the ad manager will provide ranges to the priorities and frequencies that each advertiser may associate with each advertisement. The advertiser inserts ads into the Ad Management System (AMS) that tags each ad with its appropriate metadata within the limitations assigned by the ad manager. The ad metadata fields include ad duration type, content type proximity, frequency, priority, expiry date and/or maximum number of plays.

The AMS, at either a broadcast headend or at the content web site, uses the user profile information maintained in the Subscriber Management Service (SMS) to automatically select the ads that are downloaded to the end user device. Suitable ads are matched with the device sponsor, user's (base or current) geographic location and personal profile (such as occupation, social group, earnings, content preferences) for effective ad targeting.

The AMS downloads 3 types of ad and content associated metadata to the end-device:

1. **Ad Metadata** (As detailed above, these enable the device to select ads for playout)
2. **Content Metadata** (As detailed, content tags like type (category) and Ad points which allow the device to identify content and select appropriate ads at the appropriate times for playout)

3. **Ad Configuration** metadata consists of the following parameters which enable the end device to manage ad playout:
   - **Ad threshold**: instructs the end-user device that a new advertisement slot has been reached. This decision is made based on a predefined level of ad points being accumulated by the device.
   - **Ad playlist**: determines the order in which ads of different duration types are played by the device per advertisement slot. For example:

     ad slot1 = (45 second ad, 15 second ad)

     ad slot2 = (15 second ad, 30 second ad, 15 second ad)

     ad slot3 = (30 second ad, 30 second ad)
   - **Ad Points for 3rd party content**: determines ad points for all 3rd party content played on the device by the end-user.

4.2. AD PLAYOUT BY DEVICE

The invention provides the end-device with intelligent ad management and playback capabilities. The device maintains a counter of the ad point balance by summing all ad points associated with the played content. When the ad balance exceeds the ad threshold, the device plays out the ads according to the duration types scheduled in the next ad slot as depicted in the ad playlist.

The device chooses the appropriate advertisement of the scheduled duration type by comparing the ad metadata associated with all stored advertisements and assigns playout according to some predefined combination of content proximity, ad playout priority and frequency. It can also select ads to be played in tandem with specific previously played content.

When the number of times any ad was played or time exceeds the expiration criteria for that advertisement as specified in the ad metadata, the end device will delete those expired ads and request from the AMS new ads which fit the empty duration type slots (10:15:30:45:60). The new ads are downloaded when the device next connects to the web site or receives content from a broadcast channel;.

4.3. SECURITY

The ads and their ad parameters are sent invisibly to the end device when the end-user accesses the site for downloading content or receives content over a broadcast channel. Ad download is opaque to the end user and cannot be intercepted or accessed by the end-user. Ad content storage in the device is secure and cannot be accessed by the end user.

During ad playout the device disables all regular music playback functionality (for example: fast forward, rewind and skip buttons).The end-user can only lower the device volume during ad playout. It the end-user switches turns off the device during ad playout, the device will repeat the ad when switched back on.

4.4. BILLING AND MARKETING FEEDBACK

Ad playout information will be sent back automatically to the broadcaster site for ad billing and marketing research.

The invention supports both broadcasts and unicast communication models as long as there exists a return path to the headend.

End-users can also playback 3rd party content on their devices. In this case the invention will sum default 3rd party ad points upon playout of the 3rd party content.

5. Invention Schematic

Figure 1 below describes the best mode implementation of the automated ad targeting and provisioning invention

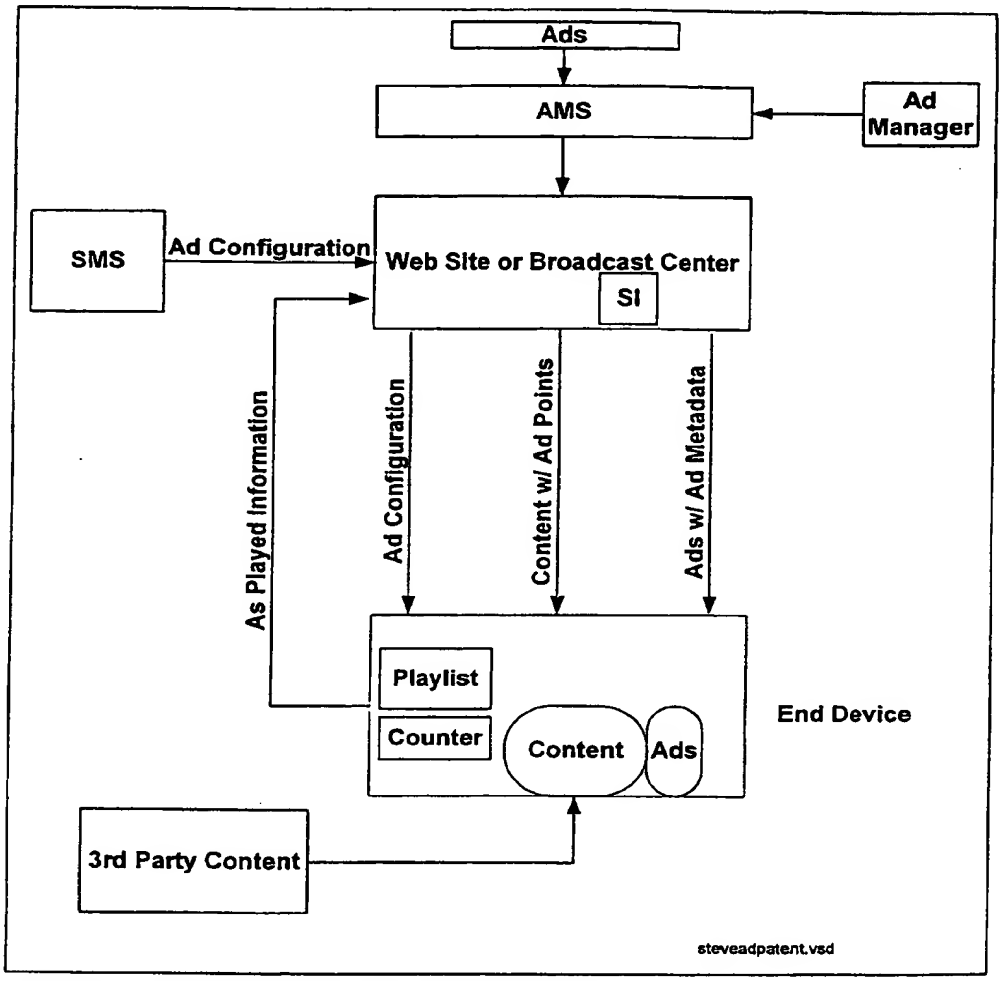

Figure 1: Automated ad targeting and provisioning system

SECTION 2.

I-162 – Titled "Recommendation of Ads to Friends & Classified Ads"
This invention describes how selected ads viewed on XTV can be sent from one viewer to another and how a viewer can compose his or her personal ad to attach to be broadcast similar to classified ads in newspapers.

- **In relation to advertisements**

1) Method to Counteract Replacement Company Advertisements
2) Purchasing from Product Placement Items
3) Referral Fees
4) Fast Forwarding
5) Metadata Protection
6) Placeholder for Ad
7) Selection of Ads to Watch Later
8) Home Stock Replenishment via XTV & Ads
9) User Control of Amount of Advertising Per Hour
10) Interactive and Story line Ads

SECTION 3.

Brief Description

This note describes an advertising device (XAD), which would be integrated with XTV in a practical application. It acquires ad material according to definable criteria, selects and presents them to the user at definable points in time, and reports back on interactions and other parameters. This proposal outlines the various methods required to implement such a device.
Note that most of the XAD methods are equally applicable (and therefore might be known in the art) in other contexts such as web browsing, though I assume we are not interested in applying for patents in that area.

Ad detection

XAD acquires ad material from sources such as broadcast digital TV streams, Internet, etc. In the case of broadcast TV, XAD can detect that a certain segment of the broadcast is an ad, and can extract the ad from the stream and store it. The detection method could be based on:

- metadata added to the broadcast stream at the headend which indicates the presence and start/end points of the ad
- heuristic analysis of the broadcast content itself, e.g. detect a sequence 30 seconds long, repeated often, and occurring at times known to be likely to be ad breaks, such as between or in the middle of events
- learning from a change in user behaviour e.g. presses button to FF or change channel, leaves room

When XAD acquires from other sources, such as a computer network, there should be no need for a detection method since the ads will already be packaged as such.

Ad storage

Once it detects an ad, XAD decides whether to store it for later presentation, by matching the characteristics of the ad to various parameters, for example:

- user previously expressed an explicit preference for the product being sold (e.g. requested more information; asked never to see an ad for the Labour Party again)
- user preferences known from external sources (e.g. intelligent garbage can has indicated to XAD that the user purchases large quantities of beer)
- heuristics based on user profile data (e.g. user is male/female, adult/child; user is in earnings and age group targeted by BMW; user could never possibly afford a BMW and doesn't drive)
- previous interactions (e.g. user has previously ordered pizza from Pizza Hut, so ads from Dominos are not stored for a certain period of time (exclusivity policy); alternatively, Dominos ads are stored (referral fees might be collected later))
- user could pay the service provider for the privilege of not watching ads, in which case ads would not be stored at all

XAD might determine the characteristics of the ad based on similar methods to those used in acquistion:

- metadata indicating the product name and categories, demographic parameters of targeted viewer groups
- analysis of ad content e.g. optical character recognition of product name

When to present an ad

XAD has a method to determine when is an appropriate time to present an ad to the user. This might be based on:

- metadata in the content being viewed which indicates when potential ad break points occur
- XAD parameters determining frequency and time of day of ad breaks
- analysis of content being viewed, e.g. XAD detects the end of an event; XAD detects end of high action scene
- user indicates he is willing to watch an ad now
- user indicates he has had enough

Which ad to present

Once XAD determines that it is time to present an ad, it uses a method to determine which of the stored ads it will present. The ad is chosen by matching its characteristics to various parameters; the parameters mentioned in the decision to store are all applicable here too, as well as others:

- number of times XAD has already presented this ad, or ads advertising the same product, or type of product (e.g. advertiser can pay to have ad presented 10 times)
- event currently being viewed, e.g. Tetley's Tea and Hovis during Coronation Street (sorry, I don't know how to convey this to non-English readers)

- association with content, e.g. metadata could suggest appropriate ad subjects, e.g. Ferrari ad after a car chase scene; high activity level (such as a sports event) might indicate certain products (cars, sports, beer) but perhaps not others (during a classical music concert, flower arranging classes)
- other ads just presented which might have synergy together, e.g. beer and Manchester United
- position in a sequence of "teaser" ads ("It's coming...", "It's coming soon...", "It's coming soon to your kitchen...", "It's here! Microsoft Garbage Can™"); XAD must keep track of where it is in the sequence so that earlier ads precede later ones

Do we need to specify the actual algorithm? Here is an example:
XAD assigns each ad a composite weighting, determined by the sum of weightings for each parameter, where each such weighting is the product of the parameter value for the ad and a weighting factor determined by the XAD configuration. The weighting of all ads is recalculated, and can change, each time before an ad is presented, and XAD chooses the ad with the highest weighting. (This example is well-known in the art of scheduling, e.g. multitasking operating systems, and itself is not novel)

Capture user interactions and presentation history

XAD captures a history of all ads it has presented (since the last reportback) including:
- ad identifier
- number of times presented
- times of day presented
- special reasons for presentation (e.g. referral parameter enabled and user chose cognate ad)

XAD captures and records interactions between the user and ads, for instance:
- user skips to next ad
- user clicks to request more information
- user orders product
- user leaves room, kicks TV set

The interaction data is stored on disk and/or smart card
This should all be covered by iADs (except maybe the disk)

Report back to center

XAD reports back on the data it has captured, so that the center can process it. It may have a method to decide which among various possible centers it reports back to, e.g. different service providers, different ad providers

Charging

The center is responsible for applying any charges arising from the reportback data:
- discount to user who watched lots of ads
- detect cheating by users who paid less but fiddled the XAD box to avoid ad playout or move it to 2am
- charge advertiser for exclusivity
- charge advertiser for referral by cognate or competing advertiser

Other processing of reported data

- send loyalty coupons to loyal users
- address special-interest ads to users who seem likely to buy (in broadcast TV this could be a message to the XAD box indicating the time and channel when the special-interest ad is broadcast)
- find the best deal for the user, e.g. user wants pizza, advertisers pay to compete and center takes bids for user's business

Again, most of this is covered by iADs

Protection of XAD parameters

XAD has a method to protect its local parameters, e.g. if the user paid less in return for watching 20 ads per hour, he should not be able to set the local parameter to 2 ads per hour

Protection of metadata

Metadata about ads is very sensitive and XAD supports various protection mechanisms:
- metadata may not be decoded unless authorized; used to prevent users from knowing where the ads are in the bitstream so they can filter them out *(e.g. metadata has its own encryption and key management scheme)*
- XAD must know that the metadata is authentic, and has not been replaced; e.g. Dominos cannot masquerade as Pizza Hut by describing their ad as such in its metadata. *Possible implementations:*

- *authentication certificat*
- *content and metadata are co-dependent e.g. their bits are mixed at headend before broadcast*
- *metadata actually is content e.g. expressed as inaudible tones superimposed on the audio signal in the masking interval*
- *metadata "cancels out" a signal in the content, e.g. is the inverse of an OSD saying "Warning: This material has bee tampered with, Big Brother will get you"*
- *metadata sent at a different time or from a different source than the content*
- *metadata must be combined with broadcast ECM in some way in order to obtain CW; card can recognize that ECM has been submitted without metadata and respond accordingly*

Do we want it? or in a diff. way

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New as metadata will go from the SC - potential to cover a lot.

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- ensuring anonymity of user except to those authorised to use the report back data
- ensuring all the collected data is reported in full and cannot be corrupted en route e.g. advertiser tries to escape payment by modifying or corrupting data

Use the SC to prevent FF ads

Identity ads displayed

Design how to procen how SC decides when to show ad (remember time lag - may be between when computer when decides to show ad + show ad - need system configuration + how will they respond to system requirements

SECTION 4.

EZRA [redacted]SHAW

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Use the SC to prevent FF ads.
Verify was displayed

Design how to process how SC decides when to show ad (remember time lag - may be between when computes when decides to show ad + show ad - need system configuration + how will this impact on system requirements

SECTION 5.

Classified Ads for XTV

XTV Advertising Patent
Jonathan Maissel et al
Version 3
21 July, 1999

1. Abstract

This document describes how viewers may create and save classified adverts, which are then sent to the Headend and broadcast to other viewers. This method takes advantage of the XTV box's storage and agent capabilities.

2. Novelty

This proposal is quite similar to Doron's patent CATV SYSTEMS NDS P-002 (US Patent 5,414,773 May 9, 1995) which describes email/fax/voicemail for a CATV system.
The principal differences are:

- Uses a standard input form with appropriate widgets.
- Anonymous advertising
- Advert can include a variety of digital files (e.g. video, 3D models etc).
- The sender can preview the classified advert.
- The sender can define the target audience (by a number of parameters), as well as the longevity and delivery of the advert.
- User and agent decide which adverts to accept.
- Mosaic and list view of adverts.
- Easy reply method.
- Advert management by agent/xtvbox.
- Syndication of classified adverts.

The original XTV patent application (P-034) explains how viewers can send 'programs' either via the SMS or directly to other viewers (see bottom of p 18 and top of p19). The method described below describes how viewers can send adverts including video and other digital files to target audiences - rather than just specific viewers.
This idea can be written using the system described in P-002 with the addition of certain components from P-034.

3. Viewer Decides to Advertise

The viewer decides to advertise using the XTV classified ads service.
By pressing a number of buttons on the remote control she navigates through the menu system until she reaches the classified ads service. She then selects the appropriate category from a list of categories. The XTV classified ads service will probably be divided according to the categories currently found in Newspaper classified advertising sections e.g. Cars, Houses, Boats, Lonely Hearts etc.

4. Ad Form is Completed by Viewer

A form appears on the screen with a number of labels and 'input fields'.
In many cases the 'input fields' are widgets (drop-down lists, option buttons, checkboxes etc) so that the viewer does not have to enter free text, but just has to choose between a limited number of options. For each advertising category the input fields will be different.

The form will also include the advertiser's contact details. By using XTV email, the advertiser may reveal their XTV email address, or remain completely anonymous. This anonymity may be suitable for lonely hearts and similar adverts.

The viewer uses his remote control/keyboard or similar input device to enter the information.

Examples:
Car Advert

Make:	Honda
Model:	Honda Accord
Year:	98
CC:	2000
Automatic:	Yes
A/C:	Yes
Mileage:	10,000
Extras:	Blaupunkt Stereo Radio Tape Recorder, Leather upholstery.
Price:	£15,000
Contact:	Frank Smith
Telephone:	123-456-789

Flat Advert

Area:	Hendon
Road:	Bell Lane
Bedrooms:	4
Floor/out of:	1/4
Size(m2):	120
Price:	£90,000
Contact:	Owner
XTV Email:	Anonymous Option

5. Viewer Adds Free Text Message (Optional)

After filling out the standard fields the viewer may optionally add a free text message describing the item.

For example:
Car Free Text Message:
Harry the Honda has been very well looked after. He has never had an accident and sleeps in a warm garage every night. He is available at this bargain price, as his owner has to relocate to Paris in the near future.

Viewer should also have the option to add voice mail message by the use of sound files discussed below, perhaps with more interaction with the Head End? Option should also exist to send ads via the Broadcaster.

6. Viewer Attaches Digital Files (Optional)

The viewer is able to add a variety of digital files of certain acceptable file formats, either by using a suitable input device, or by transferring the file from a PC to the XTV box's i/o ports.
For example:

- still picture (e.g. raster or vector picture of item being advertised).
- still photograph (e.g. photo of car or house being advertised).
- sound (e.g. a commentary or sales message),
- video (e.g. tour of house being advertised, video sales message).

- 3D model (e.g. computer simulated model of house being advertised).

The viewer may attach more than one digital file to the advert to create the desired experience.
Examples:
- Form + free text, + photograph + verbal description.
- Form + free text + 10 photographs.
- Form + photograph + video.

The XTV box or the Headend may process the files to make them smaller to send or transmit (i.e. compression) and/or more suitable for display on television. There could also be the option to send files directly from the PC to the Head End. If this is the case than a new section would have to be added to the system to handle creating Classified Ads on PC.

7. Advertiser Preview (Optional)

The advertiser will be able to see how the advert will appear when it reaches the target audience. She may then modify the advert.

8. Viewer Specifies Target Audience (Optional)

A form appears on the screen with a number of labels and 'input fields'.
The viewer is able to determine the nature of the target audience by choosing parameters from selection lists or similar widgets.
For example:
- Geographical Area (e.g. only wants to advertise his item locally).
- Age range (e.g. lonely hearts).
- Car owner (e.g. selling a car radio).

Fields will have default values, which the viewer may accept or modify as necessary. The parameters shown will vary according to the category of advertisement.

9. Viewer Specifies Express Delivery (Optional)

The viewer may choose 'express delivery' which would mean that the advert would be immediately sent to the Headend rather than waiting for the standard periodic callback, and would be immediately be broadcast to other viewers without delay. If the viewer so wishes s/he can decide that his/her ad should be sent by a special call to the Headend. Immediate broadcast is relatively unlikely. However if the customer was willing to pay then it would be feasible.

10. Viewer Specifies Advert Longevity (Optional)

The viewer may also be able to specify the longevity of the advert according to a number of different variables or combination of variables. For example:
- Number of eyeballs,
- Number of XTV email respondents
- Expiry date.

Alternatively, the broadcaster may determine that adverts are saved in XTV boxes for a maximum fixed period.

11. Advert Price Display (Optional)

The cost of sending the advert may be displayed to the user. The price of the advert changes as the viewer varies the:

- Content (amount of data to be broadcast)
- Target audience
- Express Delivery
- Advert longevity.

The packaging information would have to be included.

12. Viewer Selects Payment Method

If the viewer is satisfied with the appearance of the advert and the price, she may select an appropriate payment method.

For example:

- Bank account
- Credit card
- Smart Card
- TV account.

The cost of the advert may be debited immediately, or once the advert has achieved certain criteria e.g. been shown to x eyeballs.

13. Advert Sent to Headend

The advert is sent to the Headend via the standard 'back channel' - i.e. telephone, cable, VSAT etc. This will occur on completing the advert creation process or at the time of the standard periodic call-back.

14. Advert Scheduled for Broadcast

When the advert arrives at the Headend the digital files may be compressed or optimized for TV viewing, and then the advert will be scheduled for broadcast. Broadcast may take place immediately, for example, if the advertising viewer specified 'express delivery', or if there is bandwidth available.

Adverts may also be grouped together or 'batched' according geographical areas so that they may be more economically broadcast to specific regions or viewers only.

Adverts may be stored for broadcast until a time when bandwidth is available e.g. in the early hours of the morning. The advert may be broadcast by any of the standard methods - regular, trickle or burst.

Express delivery would work in conjunction with a program or on a separate channel/dedicated bandwidth.

15. Advert Arrives at XTV Box

When the advert arrives at the XTV box, the agent or commercial manager[1] will decide whether or not to record the advert on the hard disk or similar media. The agent's decision will be based on the following:

- Viewer defined settings (i.e. whether they are interested in receiving classified adverts of specified categories),
- Viewer's characteristics (e.g. advertiser specified that his car radio advert should only be sent to car owners).
- Viewer's advert viewing profile (i.e. recently the viewer has been looking at a lot of car adverts).

Channels for broadcasting ads or special classified viewing channels could also be used.

16. Viewer Views Classified Adverts

By pressing a number of buttons on the remote control the viewer navigates through the menu system until she reaches the classified ads.
The viewer selects a category (e.g. cars, houses, boats etc) from a list or mosaic of categories, and then sees a list or mosaic of the classified adverts. The viewer uses standard remote control buttons to navigate the list or mosaic and view selected adverts.

The list of adverts is produced by extracting the most significant fields from the advert; e.g. 4 bedroom House in Hendon.
The mosaic of adverts will be created using text from the most significant field(s) for the title, and a picture based on graphics contained inside the advert. If the advert contains no graphic content then the advert will be represented by a default generic image denoting items in the category e.g. a generic car.

Where the classified ad material fills more than one TV screen of information, the advert will be broken into screenfuls of information. Although it would be possible to give the advertiser control over the duration which the advert is displayed on the receiving viewer's TV viewer(by applying the draconian 'no skip', 'no ff') if the viewer is left to read through the advertisements in his/her own time s/he will advance through the advert using buttons on the remote control.

17. Responding to Classified Adverts

Viewers may contact the advertiser according to the information included in the advert e.g. using a telephone number or standard email address. They may also respond to the advertiser via XTV email, by using their remote control buttons to reply to the advert.

Classified adverts, which have been accepted with payment contingent on the number of responses to the advert, will have to use XTV email. When respondents reply to the advert the responses will be monitored in the Headend. When the target number of respondents is reached, a message will be broadcast from the Headend with instructions for the agent or commercial manager to delete the advert from all XTV boxes.

Similarly, when an advert is viewed, it may automatically send a message to the Headend either immediately or during the scheduled call-back, so that the eyeball count can be monitored. When the target number of eyeballs is achieved, a

[1] In the original XTV patent application (P-034) reference is made to the agent module as well as the commercial manager.

message will be broadcast from the Headend with instructions for the agent or commercial manager to delete the advert from all XTV boxes.

18. Advert Management

The XTV box agent or commercial manager will delete adverts which have passed their expiry date and those which are the subject of delete messages from the Headend.

The agent or commercial manager will also delete adverts that are being replaced by newer adverts of the same type.

The XTV box agent or commercial manager will intelligently manage the space allocated for classified ads to maximise the space available for adverts which the viewer has shown more interest in recently. For example, the viewer has recently shown interest in Honda Accord cars, so adverts for cars of other types are deleted in order to make more space for new Honda Accord adverts, or cars with similar features e.g. price, size, engine capacity.

This ensures the viewer always has access to the most recently advertised items, with an emphasis on those items that the viewer has most recently been interested in.

19. Syndicated Classified Ads

Broadcasters could syndicate classified advertisements, e.g. a UK viewer could advertise a house swap with a US based broadcaster if they had:

- compatible XTV systems,
- suitable communications links and
- suitable business agreements for transfer of payments.

Develop further

This idea is a further development of the P-005 (CATV Systems) patent by using e mail in XTV although the "e mail :here is broadcast to all viewers.

The question now is whether NDS wishes to develop a patent in this area or not.

The business model could be refined by obliging the viewers to pay broadcasters to advertise products. Price of adverts would depend on characteristics of the advert. Other viewers may see adverts for free, or by paying a fee.

SECTION 6.

Recommending an Advert or TV Program

XTV Advertising Patent
Jonathan Maissel et al
Version 3
21 July 1999

1. Abstract

This document describes how viewers may easily recommend adverts or programs to their friends by sending an XTV email message containing a reference to that item. This method takes advantage of the XTV box's storage and agent capabilities.

2. Novelty

This proposal is quite similar to Doron's patent CATV SYSTEMS NDS P-002 (US Patent 5,414,773 May 9, 1995) which describes email/fax/voicemail for a CATV system.
The principal differences are:

- The message can include payment for a PPV event.
- Uses a standard input form with appropriate widgets.
- The sender can include a video message.
- The message contains hidden identification data about the advert/program being recommended.
- Easy reply method.
- The agent does all the hard work to show the recommended advert/program.
- The viewer can choose not to receive recommendations.
- Recommendations can overrule other XTV filter rules.

The original XTV patent application (P-034) explains how viewers can send 'programs' either via the SMS or directly to other viewers (see bottom of p 18 and top of p19). The method described below sends the advert/program identification information rather than the actual video to other subscribers.
This idea can be written using the system described in P-002 with the addition of certain components from P-034.

3. Viewer Wishes to Recommend Ad/Program

The viewer is:

- watching an ad,
- watching a TV program,
- listening to music,
- using software or other material which has been broadcast
- looking at a listing in the EPG (Electronic Program Guide).

This information is being presented to the viewer either live or from the XTV hard disk.
If the viewer wishes to recommend the item to a friend she presses a button or sequence of buttons on the remote control.

4. Message Form Appears on Screen

A form appears on the screen with a number of labels and fields. Some of the fields already have information displayed in them.
The form displays the name of the current viewer (or a selection list of members of the household) which is obtained from the smart card. It also displays the name of the current ad/program that is being recommended which is obtained from the SI or XTV meta-data.

The message also contains other information taken from the SI or XTV meta-data for uniquely identifying an ad/program, but this is not displayed to the viewer. [1]

This information could include:

- A 'standard universal content id number' which would be used by all broadcasters worldwide - similar to the ISBN number system that is used by publishers all over the world to identify books and other publications.
- A 'content id number' that would consistently be used by a particular broadcaster to uniquely identify all of his content.
- Program information, including but not limited to:
  - Title
  - Episode Number
  - Credits - including director and actors etc.
  - Creation date
  - Parental rating.

5. Viewer Enters Friend's Details and Message

The viewer then enters the friend's details - probably name and phone number, and then may optionally add a message. The details and the message are entered using a suitable input device - for example, keys on the remote, or a keyboard. A video or audio message could be included if the viewer has suitable input devices attached to the XTV box I/O ports. The viewer presses a button on the remote control or keyboard to send the recommendation message.

6. Message Sent to Headend

The message is immediately sent to the Headend via the interaction channel or is stored in the XTV box until a scheduled callback takes place. In general, the viewer-defined set-up will specify when recommendation messages are sent immediately or saved to wait until a scheduled callback. For example, it will specify whether messages recommending programs due to be broadcast prior to the scheduled callback are sent immediately or stored until the scheduled call back.

7. Headend Sends Message to Recipient

The Headend matches the friend's details (name and telephone number) with a specific smart card and broadcasts/sends the message to the friend's XTV box. It may be broadcast or sent specifically to the viewer by cable/telephone/Internet. Best way to broadcast the message is probably when bandwidth is cheap - e.g. middle of the night or by trickling the info using spare bandwidth at same time as other programs are being broadcast.

[1] Improvement following conversation with Doron Handelman (10/6/99)

If the friend does not receive broadcasts from the same broadcaster, for example, because he is located in a different area/country, then the broadcaster may forward the message to other broadcaster(s) that broadcast in the friend's area. This would depend upon agreement between the different broadcasters and the use of similar XTV systems.[2]

8. XTV Box Plans to Show Ad/Program

The friend's XTV box receives the message, and the agent, though not necessarily the agent, checks to see if the ad/program is already recorded on the hard disk. It bases its search on the id number and the other identifying information listed above.

If it is on the hard disk:

- If it is an ad, then it will be displayed to the friend at the next suitable opportunity (i.e. when the agent identifies a suitable context in a TV program).
- If it is a program, then the program will be given high priority in the XTV agent's selections for the viewer.

If it is not on the hard disk:

- If it is an ad, then the agent will add the ad's id. number or other identifying information to a list and display/record it when it is next broadcast.
  Alternatively, if the advert is being shown by on one of the XTV broadcaster channels, then when the message passes through the Headend, the broadcaster can add information telling the agent when the advert is going to be broadcast. This would give information of specific times on specific channels, or alternatively, the broadcaster may choose to broadcast adverts at a certain time at night when bandwidth is available. Another option is that the advertiser will pay for the cost of broadcasting the advert to all viewers who receive recommendations.
- If it is a program, then the agent will check the current EPG information and record it when it is next broadcast. If the EPG information does not contain listings for the recommended program (i.e. it is not being broadcast in the next few weeks), then the program's id. number or other identifying information is added to a list of programs to be recorded when it is next broadcast. Whenever the agent analyzes the EPG data to identify programs which match the viewer's profile, it will also check the 'to be recorded list' to see if any of the programs are due to be broadcast.

9. Message Sent to Email Inbox

The recommendation message is also sent to the recipient's email inbox. If the ad or program is stored on the hard disk, then the viewer will press a button on the remote control to play the item. The recipient can also reject the recommendation or reply to the message by pressing button(s) on the remote control.

10. Ad/Program is Shown with Message Icon

When the ad/program is shown, an icon representing the message is displayed in a corner of the screen. The viewer can press a button to view the message, which would then partially cover the screen. The message will contain the sender's

[2] Improvement following conversation with Doron Handelman (10/6/99)

name and a message if there is one. Text messages are displayed when the message is opened; audio or video messages are presented by pressing another remote control button(s).

11. Viewer May Reply

After seeing the message, the viewer can respond by activating a reply button and adding a text/audio/video message. The message will be sent in a similar manner to that described above.

12. Recommendations - Set-up

Viewers can choose not to receive recommendations, by adjusting their XTV set-up details. In these cases 'the recommender' receives an automatic reply that the recommendation was not accepted. This is similar to Outlook's 'Out-of office auto-reply message'.

13. Overruling or Upholding Filters

The viewer can set a filter to block reception of certain ads/programs - as described elsewhere in the XTV patent. In addition to this they would have the option of overruling or upholding the filter, if they receive a recommendation message.

- Filter Overruled - Example - ViewerX does not want to receive charity appeal adverts and has set up a filter to block them. However, she will view charity appeal adverts if a friend recommends them. In this example the filter has been overruled by a recommendation message.
- Filter Upheld - Example - ViewerY does not want to receive pet food adverts and has set up a filter to block them. She will not view pet food adverts even if a friend recommends them - for example - because they are particularly amusing. In this example the filter has been upheld despite receiving a recommendation message.

14. Gift Recommendations

If the viewer is recommending a pay-per-view (PPV) event (due to be shown in the near future), then they have the option of paying for the PPV event as a gift for the recipient.[3]

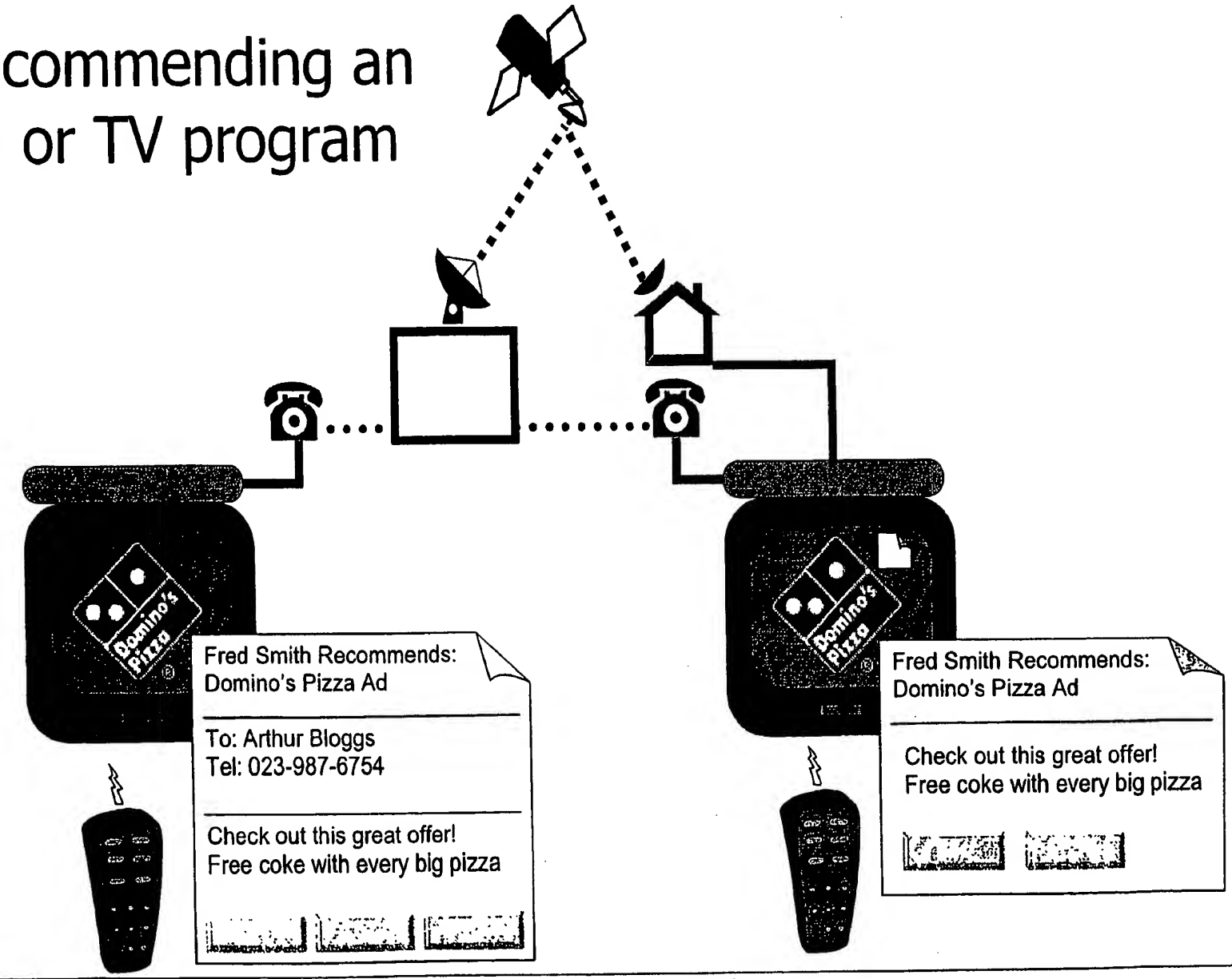
If the recipient watches a TV service provided by the same broadcaster, then when the person making the recommendation enters the friend's details they will also indicate that they want to pay for the event and choose a method of payment (e.g. Bank account, Credit card, TV account). When the message reaches the Headend special 'individualised entitlement messages' I-EMMS will be added to the message that is sent to the recipient's smart card. When the message reaches the recipient's XTV box, it will show up as a message in the recipient's email box and the agent will be instructed to record or show the PPV event. The recipient can then watch the event without paying.

[3] *Idea from Sam Michelson (email from 8/6/99)*

If the prepaid recommendation message is intercepted, eg by hackers en route from the Headend, or copied from the recipient's smart card, it will not allow others to watch the PPV event without paying as the entitlement messages have been individualised to only work in conjunction with a specific smart card.

If the recipient does not want to watch the gift recommendation, they can send a 'rejection reply message' by pressing a button(s) on the remote control. In this case the I-EMMs will be deleted, and a 'rejection reply message' will be sent back to the sender. When the message passes through the Headend the person who recommended the program will be credited for the cost of the unused gift.

Recommending an Ad or TV program



SECTION 7.

RE: PURCHASING FROM PRODUCT PLACEMENT ITEMS

MIKA KRAUS - DIFFERENCES BETWEEN ADS FOR XTV AND INTERACTIVE ADS.

xtv_and_interactive.txt

General Ideas about Purchasing From Product Placement Items and interac
tive ads:
It seems to me there is a strong connection between the ideas.
Maybe XTV can be the system that will carry the idea,but I think XTV cr
eate new questions:
QUESTIONS RELEVANT FOR XTV+ADS (n/a for Ads)
Interactive ad was thought as something you see when it is broadcasted,
but what if we watch a recorded program?
It could be that the ad should be changed or is irrelevant any more
Examples:
1-the price of the product has changed or other data about the product
(no more product in the inventory etc..)
especially if there is a special price to the time of the broadcast.
2-We don't want the ad to appear - for example , in the patent seggesti
on there is an example of a lottery.
We wouldn't want someone to participate in a lottery that its results w
ere already published.
3-The supplier may want to sell only limited amount product through the
ad.In this case if we watch again and again,
we need to see the ad only in the N first times.

POSSIBLE SOLUTIONS
Possible solutions to these questions can be adding a time stamp to the
ad
so it will say till what date that ad can appear and after it, it shoul
d either be updated or just not appear.
Also we can ad an atrribute saying how many times we should watch an ad
, and each time we see the ad,that number is reduced
(another question is if we saw an ad , and then we did rewind to the fr
ame where this ad appeared-
do we need to see it again or not)

QUESTIONS RE: IMAGE OF XTV ADS
Other questions that are relevant to the two ideas:
1-do we use a keyboard , or any other tool that has keys on it? If not
how can we give detailes to the ad
(for example an address)
2-Do we want to use complicated menues (in the patent segestion there i
s a diagram of a windows -like dialog box)
which gives lots of flexiblity and the interface is familiar to people
who know windows,
but it might be to complicated to people who aren't aware to computers
and its need lots of interactivity,
or we want to limit the options
(always use the address of the user and its credit bill as they are kep
t in the suscribers data base)
3-Another question secuirity issues:is if we send things like credit ca
rd password etc...

CONNECTION IN HEAD-END
Another point:
Maybe the strong claim in the idea of Purchasing From Product Placement
Items is the connection between the item AND
appearance in the program and therefore what should be more important i
s how we create this connection in the headend side.
Several things about the headend side and xml:

First in xml we can check if a file is a legal xml - "well formed" (sam
e as the sentence "key blue is" isn't a legal sentence in English)
and if the xml is a part from our language" -"valid" ("key is orange"
is a legal snetnce in English but not in our language since we use only
RED,BLUE,GREEN and YELLOW)
The Headend can use a DTD file for ads
(DTD is a file which define our language-this way we can limit our lang
uage to specific keys we react too, and specific commands like-buy,see
commercial,create menue etc..)
and an Xml parser that check for "well formed" and "valid" documents.
Also, regarding the comment about the items location on the screen (com
ment 3 below), it needs to check the items location.

==========

About the comments you sent in mail:
1-Regarding the application having families of ads -
buy now ad - more confirmations are needed
also commands are needed regarding how payments are made and delivery i
s execiuted

Two main options:
1) As I wrote above , we can use dialog boxes to receive more i
nformation (about the product and about the delivery)
I guess the question of how to do it should be included in the
interactive ad patent segestion.
2) If we use the 4 colors model we can divide each question to
4 answers-it is simple and not "computerish"
but it may look odd sometimes and to long process.
Example: say we had sevearal items and from them we chose a shi
rt
then we have 4 bitmaps of 4 sizes of shirts, we chose large.
then we can choose between 4 colors of a shirt etc...

2-Regarding Differentiation and Order :
There are two kinds of diffrentiation between ads:
1-The "real" diffrance between two items-this can be difrrent items,dif
frent suppliers, diffrent sizes etc...
2-The diffrent between them for the system.The application should be aw
are to that it has several items , and when the user is pressing a key,
it should know to which it should react.
There are several ideas which i mentioned before:
1)-we have up to 4 items , each one has a color frame around it
, and the application diffrantiate between them by color
2)-we have a number appearing on each item,and the application
diffrantiate between them by number
2)-we have a special colored frame appearing areond one of the
items.this frame can move between items using arrows.
the application knows the item who has a frame around it is the
item it should react too.

3-Location of items:

QUESTION:-

There are two problems:
1-the items shouldn't hide the program
2-the items shouldn't hide each other.

ANSWER:-

Ideas to solve the problem:
(Notice: this problem should be checked in the headend before s
ending the file)
1)for simplicity let us say we divide the programs into frames,
and for each frame we define the minimum area
of program we should watch.
then for each item in the frame we define its size and location
.

afterwards we build a checker that parses the xml and checks fo
r each frame if the items in it cover the
the minimum size we difined for the program and if it hide the
other items.
If we have a problem we should create an error message saying w
hich frame is problematic.
notice: all areas should be relative (we use relative to 1000)
so they can relate to each other.

Examples:
good example: (notice: we see more than the minimum area in thi
s case)

```
<FRAME ... RECT="0,0,900,900">
        <ITEM RECT="900,0,1000,100"/>
<FRAME>
```

bad example:

```
<FRAME ... RECT="0,0,900,900">
        <ITEM RECT="800,0,1000,100"/> //item.left<frame.right -
 collision
<FRAME>
```

2) A very simple solution , though very limiting:
Say we are using again the 4 colors model (meaning we can only
use 4 colors)
We can define determined areas for each color - for example the
4 corners of the screen)
We can also decide to use a determined size for the ads or just
limit to a maximum size (for example)1/4*1.4 of the screen)
Using a very determined system make it very simple to the autho
r
(instead of writing <ITEM rect="0,0,250,250", key="RED" ..
you should only right <ITEM ITEMTYPE="RED")
and it makes the user interface simple and consistent.
However the disadvantage is it makes the system very limited, a
nd ruin the flexablity
and the connection between the location of the item in the prog
ram and the location as an ac.

SECTION 8.

MIKA KRAUS

==========

1-The struct of an item and how to react to user
Assumption: somoene (on the headend side) watched the program and saw that on the third minute you can see a ford
and we want it to appear on the left bottom quarter of screen
We have several options:

----1: the easiest - we add in the item instructions for each key:

here we assume we have a list of known possible actions (buy,go to commercial) and we know what kind of argument each of them need

advantage:
very easy to understand
disadvantage:
the xml author should know alot about the application (what functions to use,what arguments)
and a lot is repeated (every time we want to add an ad we should write the commands)

```
<TIME
      NAME="ford" //name of ad item
      FROM="00:03:00" TO="4:0" //time of appearance
      H="500" V="500" WIDTH="500" HEIGHT="500"  //location on screen in range of 1000 h-horizontal v-vertical
      BMP="ford.jpg" TYPE="pict" //we use a bitmap as an ad and the name of it is bmp.jpg (we assume the bitmap is also sent)
      PRICE="50,000 $" SUPLIER="FORD LTD" ADDRESS="ATLANTA Washington st 200" //just as an example
>
            <KEY KEY="BLUE" ACTION="buy"/>
            <KEY KEY="SELECT" ACTION="go to commercial" ARGUMENT="ford_commercial_movie.mpg"/>
</TIME>
```

----2:
the application should have families of ads (divided by behaviour)
for example :
buy_now ad: the moment you press this ad you buy it
buy_or_see_commercial ad:an ad where you can either buy or watch a comercial
cupon ad:you can select one only one option from the current ads at a current time
(and you can't buy the cupon twice)

for each family we have written functions to which they react:
(from our example: buy_now can react only to select and then it means buy it,or maybe just to it color
buy_or_see_commercial: pressing slect says buy product,pressing info means go to commercial)

in this example (based on the demo) each item have a color to which it responds (saying I bought the cupon,you can't buy any thing more now, and you can't buy me again)

<TIME

```
      FUNC="cuponpress" //the name of the family
      NAME="ford" //name of ad item
      FROM="00:03:00" TO="4:0" //time of appearance
      H="500" V="500" WIDTH="500" HEIGHT="500"  //location on screen in range of
1000 h-horizontal v-vertical
      BMP="ford.jpg" TYPE="pict" //we use a bitmap as an ad and the name of it
is bmp.jpg (we assume the bitmap is also sent)
      PRICE="50,000 $" SUPLIER="FORD LTD" ADDRESS="ATLANTA Washington st 200"
//just as an example
>
      <KEY KEY="BLUE" />
      <SMARTVAR NAME="ford" PERSIST="TRUE"/>
      <SMARTVAR NAME="cuponpresshide" PERSIST="TRUE"/>
</TIME>

NOTICE: in this example we used smart varibles to connect between diffrent
members of the cuponpress family
the cuponpresshide tells all the the items from cuponpress family,who have this
smart varible to hide themself.
There are simpler ways to do it.

In general this can be done in several ways.the diffrences are:
-how easy is the method
-how general it is (limited by functions,keys and families)
-how much flexbility we want to give the author (do we want all members of a
family to behave the same or not)
================================================================================
==============
2-diffrentiation and order:
if we limit ourselvs to 4 items per frame and each item has a specific color
then no need to order
pressing the color of the item should identify the item we relate to

if we want to use order:
this might be easier if we divide the program into frames and list the the items
per frame
the default order can be the order in which items are written (or alphabetical
order or by price)
how it is shown:
the application should add a symbol (a color frame seems the best to me) and to
show it above the first item
(the exact location of the symbol should be the location of the item)
by pressing arrows (let us say -> means next and <- means previous) the symbol
goes around the item
(while the application is aware to which item is focused at the moment)
in this case, pressing keys is relevant only to the current focused item

================================================================================
3-The idea that a relevant item can appear in a specific time & location
(This is ofcourse relevant to recorded programs ,or in live show to something
that already happened)
In the headend side,some one should watch the program, and collect all the major
items in it.
Then he should write when the item appear and maybe the plcae in which they
appear on screen
(example: if the program is "Beverly Hills 90210" , brendon talks to brenda , he
is on the right side and she is on the left side
```

then an ad to his shirt should appear on the right side and to her shirt on the left side)

More about relevance: if we use this system for "voting" (let us say in a beuty contest)
then the "vote for me" ad should appear for each competeter when she is on the screen-
in this context the acuracy of time is very important.

SECTION 9.

USER CONTROL OF AMOUNT OF ADVERTISING PER HOUR

COORDINATOR/DEVELOPER: Sam Michelson

Problem Statement / Goal

There are currently two ways to watch television: with advertising or without. Broadcasters choose whether viewers should watch television without commercials and pay to receive the broadcast signal or receive programs free or at a cheaper price, and view commercials as well. Enabling the viewer to play an active role in deciding the amount of advertising he wishes to see benefits both the broadcaster and the viewer.

By giving viewers the ability to decide how many minutes/hour of advertising they want to see broadcasters can benefit from a pay-per-view model even on regular programming channels. Viewers may benefit by paying to see commercial-free television in order to save time and/or avoid seeing advertising.

Abstract

The traditional model of commercial television allows for a set proportion of commercial/program time. For example, during the 7-8 PM time-slot the NBC network might show a total of 15 minutes of commercials, with the television program being shown during the remaining 45 minutes.

Decreasing the commercial time involves having the program available in memory in advance of when it is to be viewed. This can be accomplished in two ways:

1) The TV program is already saved in the STB and commercials are inserted (or not) according the viewer's preference.
2) The program is broadcast at the time it is to be viewed; the STB records the program if necessary, so that the program can be paused for commercial inserts.

In either case. commercials would be prerecorded to the viewer's STB and played at the appropriate program breaks.

Method (a) How & (b) Best Way

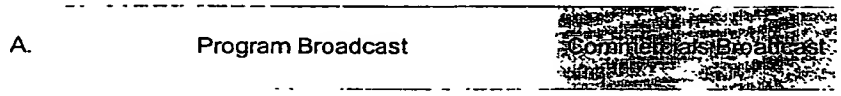
The broadcaster controls the commercial/price tradeoff by defining the following parameters, which are reflected in the headend:

- Does this program have an option to lower the amount of commercials and pay for this privilege?
- What is the maximum minutes of commercials per hour for this program. How many minutes of commercials per hour does one have to see for the program to be free?
- What is the price one pays for each minute of commercials not viewed?

The system described will work best in an environment where users are not able to record commercial television and automatically remove commercials, or fast-forward through them. It would work best in a STB environment in which access to commercial programming is allowed based on the user's viewing a certain amount of commercials per hour.

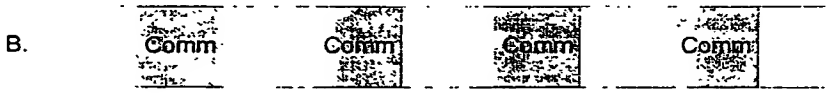
Diagrams

Two possible broadcast models are illustrated below.



In A, the program is broadcast without any commercials.

- Viewers who pay for the privilege of not seeing the commercials will see the program as broadcast (or at some later stage from their STB's local storage. The advantage of A is that commercial-free viewing can be accomplished even when the program viewed live. The viewer would then presumably turn off the TV or watch a recorded program instead
- Viewers who choose to watch the program free will view commercials which have been recorded to the box's local storage.



In B, the commercials are broadcast during breaks in the program (as is the current model in commercial broadcast television. Viewing fewer commercials per hour can only be accomplished when the program is viewed at a time delay from local storage.

Examples

Benefits

Broadcaster can earn higher viewer/hour revenues, while giving viewers the choice to pay or not to pay.

Viewers benefit by being able to define for each particular program whether they prefer a PPV model or the normal commercial model.

Prior Art

The only current model which is similar is the choice viewer have to watch commercial television or pay TV which may have fewer commercials or none at all.

Disclosures

SECTION 10.

RON KATZ

Sending Ads to Friends:

---- this is not from me ----------
Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best
if black paint was used as opposed to white paint then specify that black paint should be used.

Ad is not sent, just an id no. and accompanying text/voice/video message.
Sent via back-channel.
Best to send at night if sent by phone and includes accompanying message.
'Recommendations' broadcast to all viewers or sent to specific XTV boxes during callback.

RK:

Possible implementation:

Each piece of material which is broadcast (e.g.
movie, ad, sports event) would indicate the available services which a user
can chose for this event by calling up a menu (perhaps this is a new idea).
For example, pressing BLUE
for any item would bring up a menu. For an Ad it may look like:

1. Save
2. Send to friend
3. Send Feedback

For a movie it may look like:

1. Save
2. Get movie info

etc.

Choosing "Send to friend" would call up a form where you must enter the friends ID and your own ID. Your personal ID would be read from the Subscriber
Smart Card, your friends ID would have to be some identifying information
such as name + phone number.

The information would be sent to the HeadEnd during a callback, either via the interactive channel or during standard TV callback.

The HeadEnd would match the sender's SC info with personal id, e.g. Smart Card 87047457 is John Doe. It would do the opposite translation to find the subscriber ID of the receipient and send it via (what we call) email, i.e. Sky mail.

The receipient would have the option to tell the SMS to block receiving ad recommendations.

Sender could optionally be charged for this service.

Each ad is broadcast with an ID, this ID is send in the callback and id entified at the headend.

The headend can send the ad to the receipient by putting into an email (Skymail) message.

When the Ad is received at the receipient's STB, it is not displayed as a standard Ad (since this could interfere with contractual agreements between broadcasters and advertiser). This ad would appear like a Sky mail message, which the receipient would open and view on the TV. It would indicate the source from where it was sent.

Benefits:
-Advertiser: Get more cycling of advert, + targeting to best population
-Users: Ability to share interesting ad with friends
-Broadcaster: More bandwidth usage, there could be charges for this service.

SECTION 11.

XTV PATENT GUIDELINES

INDEX

1) METHOD TO COUNTERACT REPLACEMENT COMPANY ADVERTISEMENTS

COORDINATOR/DEVELOPER: EZRA DARSHAN

Problem Statement / Goal

XTV currently allows User to watch ad, select product being advertised (e.g. Pizza) and then receive ads from rival (Pizza) companies.
This invention would prevent this happening.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Diagrams

Include fully annotated diagrams as needed.

Examples

As mentioned above. User would click on "Pizza Hut" ad and would not receive ads from other companies.
Mention other examples.

Benefits

Supplier companies would have guaranteed exclusive exposure.
Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

2) PURCHASING FROM PRODUCT PLACEMENT ITEMS

COORDINATOR/DEVELOPER: *TBD*

Problem Statement / Goal

The viewer would be able to see a list of purchasable items that appear in the current frame of a TV show. The viewer then selects the item he wishes to purchase and presses another button to purchase the item. Certain items may require further information before an order can be completed (e.g. size, color) and the user makes these choices from a one or more dialog boxes which appear on the screen. The order is sent to the broadcaster by the back channel (e.g. telephone or cable network), either immediately, in the middle of the following night, or at the time of the periodic callback - depending on preferences previously selected by the viewer. The broadcaster then forwards the orders to the relevant suppliers, either singly. or grouped according to number of orders (e.g. 100) or a periodically (e.g. daily). The cost of the item is charged to the Viewer's TV bill, or to an account that the user has selected previously (e.g. bank account, credit card etc). Items are delivered to the address previously specified by the viewer, or to another address if specified during the purchase procedure.

The viewer can also display a list of all purchasable items in the show. rather than just in the current frame.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.
Each frame is tagged with a list of the products in the current frame.

Diagrams

Include fully annotated diagrams as needed.

Examples

User would be able to receive choice of rival suppliers

Mention other examples.

Benefits

User has wider available options
Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

3) REFERRAL FEES

COORDINATOR/DEVELOPER: SHLOMO KIPNIS

Problem Statement / Goal

XTV currently allows User to watch ad, select product being advertised (e.g. Pizza) and then receive ads from rival (Pizza) companies.
This invention would ensure that the original advertiser would receive compensation for acting as a "gateway" to its rivals.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Tagging and hyperlinks would be needed.
Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Diagrams

Include fully annotated diagrams as needed.

Examples

As mentioned above. User would click on "Pizza Hut" ad, would receive ads from other companies. Pizza Hut would be reimbursed. *Mention other examples.*

Benefits

Would raise revenue.
Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures
Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

4) FAST FORWARDING

COORDINATOR/DEVELOPER: REUVEN WACHTFOGEL

Problem Statement / Goal

User is forced to watch a certain amount of ads. This invention would give user control so that ads could be "skipped".

The broadcaster can specify whether or not the viewer can:

(i) Skip watching an ad.
(ii) Postpone watching an ad. Also the maximum number of postponements permitted.
(iii) Fast forward an ad.
(iv) Fast forward an ad after watching a certain section (or collection of frames) in the ad.
(v) Filter the ads according to personal preferences.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Ads tagged using the XAd Tagger...

Diagrams

Include fully annotated diagrams as needed.

Examples

Mention other examples.

Benefits

Greater User control
More cost effective for advertiser - as no. of eyeballs includes just those that are interested in the product.
Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

5) METADATA PROTECTION

COORDINATOR/DEVELOPER: EZRA DARSHAN

Problem Statement / Goal

Protection of the metadata.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works. Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Diagrams

Include fully annotated diagrams as needed.

Examples

Mention other examples.

Benefits

Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

6) PLACEHOLDER FOR AD

COORDINATOR/DEVELOPER: *TBD*

Problem Statement / Goal

Currently a User watches random ads, which are controlled by the Broadcaster. This invention would allow the User to program in his/her preferences as to those products which s/he wishes to receive ads for.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works. Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Diagrams

Include fully annotated diagrams as needed.

Examples

Mention other examples.

Benefits

Greater User control
Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

7) RECOMMENDATIONS – SENDING ADS TO FRIENDS

COORDINATOR/DEVELOPER: *TBD*

Problem Statement / Goal

This invention would allow one User to 'send' ad to another User.
Users could forward the ad with or without accompanying text/voice/video message.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Ad is not sent, just an id no. and accompanying text/voice/video message.
Sent via back-channel.
Best to send at night if sent by phone and includes accompanying message.
'Recommendations' broadcast to all viewers or sent to specific XTV boxes during callback.

Diagrams

Include fully annotated diagrams as needed.

Examples

Mention other examples.

Benefits

Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art
Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures
Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

8) SELECTION OF ADS TO VIEW LATER

COORDINATOR/DEVELOPER: *TBD*

Problem Statement / Goal

This invention would allow certain ads to be stored and watched later at the User's convenience.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works. Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Diagrams

Include fully annotated diagrams as needed.

Examples

Mention other examples.

Benefits

Greater User Control
Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

9) HOME STOCK REPLENISHMENT VIA XTV & ADS

COORDINATOR/DEVELOPER: EZRA DARSHAN

Problem Statement / Goal

This invention would allow User to notify a supplier (order an ad.) to replenish stocks of householder supplies.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Diagrams

Include fully annotated diagrams as needed.

Examples

Mention other examples.

Benefits

Supplier companies would have guaranteed exclusive exposure.
Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

10) USER CONTROL OF AMOUNT OF ADVERTISING PER HOUR

COORDINATOR/DEVELOPER: *TBD*

Problem Statement / Goal

Transfer of control to User over the number of ads s/he must see.
Viewer can change settings in realtime. Include a sliding scale of subscription fees.
Include the possibility that the user would pay to watch less ads.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Diagrams

Include fully annotated diagrams as needed.

Examples

Mention other examples.

Benefits

Greater user control.
Supplier companies would have guaranteed exclusive exposure.
Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

11) CLASSIFIED ADS

COORDINATOR/DEVELOPER: *TBD*

Problem Statement / Goal

Allows User to compile own ads which would be sent via Broadcaster to other Users.
Ads may include a combination of text, photo, voice, video.
Sent to broadcaster via back-channel.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Diagrams

Include fully annotated diagrams as needed.

Examples

Mention other examples.

Benefits

Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

12) INTERACTIVE & STORY LINE ADS

COORDINATOR/DEVELOPER: REUVEN WACHTFOGEL

Problem Statement / Goal

Soap opera style advertising & control to User to determine outcome of advertisement.

Abstract

Include short description of technology involved.

Method (a) How & (b) Best Way

Include detailed instructions as to how this invention is built and how it works.
Include the best way in which this invention can work. Eg if an invention would work best if black paint was used as opposed to white paint then specify that black paint should be used.

Diagrams

Include fully annotated diagrams as needed.

Examples

Mention other examples.

Benefits

Supplier companies would have guaranteed exclusive exposure.
Mention other benefits as relevant to Headend/ Broadcaster/ NDS

Prior Art

Indicate what is already "in the outside world" that relates to this invention with examples if possible.

Disclosures

Include details of all disclosures that have been made about this invention whether orally or in writing and whether or not an NDA was signed.

SECTION 12.

Nicholls, Elaine

From: Mais[redacted] Jonathan
Sent: Sun[redacted]8 March 1999 10:02
To: Richardson, David; Nicholls, Elaine
Subject: Ideas for XTV patent - XSeries Ads, XSeries iAds, iVideo.

Hi David & Elaine,

Before I forget here is a note of some old and new(?) ideas for the XTV patent.

Series Adverts (XSeries Ads)
This idea suits soap opera style advertising that has been used for coffee in the UK. It also suits 'teaser' advertising - "we will reveal our new model soon..."

We have previously discussed 'series adverts' which can be stored on the hard disk.
These adverts would be shown in a set order.
The next advert in the series would be shown either according to:

- the number of times the previous advert was viewed, or
- according to specified calendar dates.

Interactive Series Adverts (XSeries iAds)
This idea is an improvement on series adverts as the viewer/s determine the continuation of the advert. This is similar to the Israeli milk advert soap opera where viewers were asked to phone in to vote for the continuation of the advert.
XTV can allow viewers to personalise the experience by allowing them to choose one of a number of continuations to the soap opera. In which case, the appropriate advert is shown to them from the hard disk. **(Personal XSeries iAds)**
XTV (and other NDS systems with call-back to the Headend) could also allow an easy voting mechanism for a continuation which would be viewed by all viewers. **(Communal Series iAds)**

Interactive Video Programmes (iVideo)

XTV is the ideal platform for interactive video, where each viewer determines the course of a story. This is because a number of stories are stored on each viewers hard disk and can be shown according to each viewer's choice.

A more novel way (patentable?) to implement interactive video programmes on XTV would be to broadcast a number stories at the same time using BURST mode (i.e. utilising maximum bandwidth). This implementation would not require such large amount of free space on the hard disk as it would just be used for buffering (?). The downside of this method is that it could only be viewed 'live' i.e. at the time of broadcast. Also the parallel storylines would have to be exactly the same length!

An equivalent method for current (i.e. non XTV) broadcast systems, could be achieved by broadcasting a number of stories in parallel on different channels. The viewer would create the story by pressing buttons at the appropriate junctures, and these presses would direct the viewer to the appropriate channel.

Please consider if there is anything here worth patenting or developing.
Yours,
Jonathan

GUI & DEMO GROUP
We are the image makers,
And we are the dreamers of dreams.

SECTION 13.

Ideas for XTV advertising

Jonathan Hassid 22/3/99

NDS

Rules of the Game

- Defer all judgement when generating ideas
- Try to write extra ideas on paper

NDS

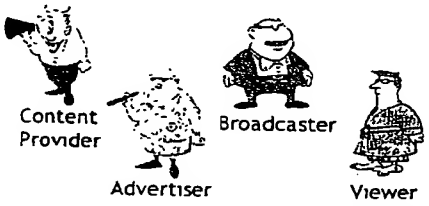
The Challenge

- In what ways might we improve advertising using XTV?
- What do we mean by 'improve advertising' ?

NDS

In what ways might we improve advertising using XTV?

- People perspective



NDS

'You are a...'

- Assigned roles
- Work in pairs
- Write ideas
- Review ideas together

- 10 minutes

NDS

In what ways might we improve advertising using XTV?

- An activity/technology perspective

Broadcasting	Tagging	Buying
Storing	Counting	
Linking	Reporting	Selling
Selecting	Saving	
Displaying	Forwarding	

NDS

'Brain Purge'

- One idea per card
- Pass to right
- Read and improve/create

- 10 minutes

NDS

In what ways might we improve advertising using XTV?

- An advertising perspective

Entertaining Saving

Educating Incentives

Playing Linking

Buying Gimmicks

NDS

Pass The Buck

1 Absurd bizarre exotic idea

2 Somewhat realistic

3 A little more realistic

4 The buck stops here!

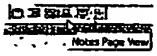
NDS

SECTION 14.

Hi Yossi!

I hope you like the presentation.
You will see that I trimmed your text.

The original text is in the notes for each slide.



Yours,
Jonathan

NDS

XAD

Yossi Tsuria
NDS Israel
February 1999

NDS

Problem Statement

Commer[illegible]n is dying.
Disk-st[illegible]may be skipped.
The industry[illegible]a solution!

NDS

Assumptions

A real problem that needs a solution
Storage is integral part of the STB
STB is controlled by the broadcaster
Broadcaster dictates
- what is stored and
- what/when it is viewed

NDS

Potential Solution #1: No <FF> During Commercial

<NO FF> tag attached to Ad
Revised solution:
- <NEXT> goes to next commercial on disk
- Commercial break has set time (e.g.90s)

Another option:
- Ad repeats until you watch it

NDS

Potential Solution #2: No Commercial Breaks

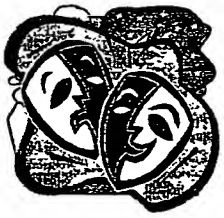
Commercials will be integrated into XTV
Push
- In the Navigator
- As a banners

Pull
- As a catalog

Incentive and Targeted AD!

NDS

Targeted XAD



3 category types:

Target audience
Time of day
Associated content

NDS

What We Propose

To design and build a system that will support both types (and other TBD) of solutions

- The system will composed of:
  - XAD Packager (insert meta-data)
  - XAD Engine (understand meta-data and act upon, handle banners)
  - XAD report-back system

NDS

XAD Meta-data

Behavior

- Minimum time: All..10sec..0
- FF: No/Yes
- Next: No/Yes
- Enforce: Yes/No
- Deleteable: No/Yes
- Priority: 1..5

Time Window

- Not before: <date><time>/<event>
- Expired: <date><time>/<event>
- #times to appear: 1..5

Context

Comedies/Kids/...

Audience

128 bit map

NDS

Report Structure

Basic params:

- AD id
- Stored time
- 1'st view time
- Viewing status
- Expiry time

Interactive params:

- AD record (e.g. how many points)

NDS

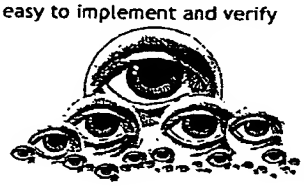
Advanced XAD topics: Kilo Eyeballs

Sell ads per guaranteed Kilo eyeballs

- Broadcaster gives price for 50 Keb.

XAD + report-back

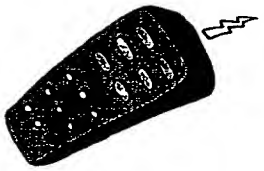
- easy to implement and verify

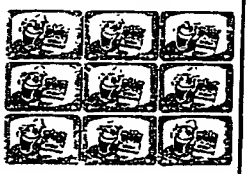


NDS

Advanced XAD topics: Persistent Ads

AD still to appear when you change channels

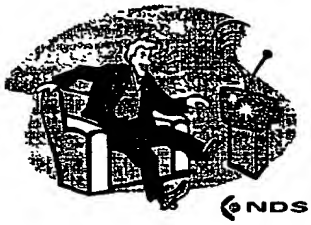




NDS

AD Types

Motion, full screen
Motion - part of the screen
Still
Banner
Audio



NDS

Summary

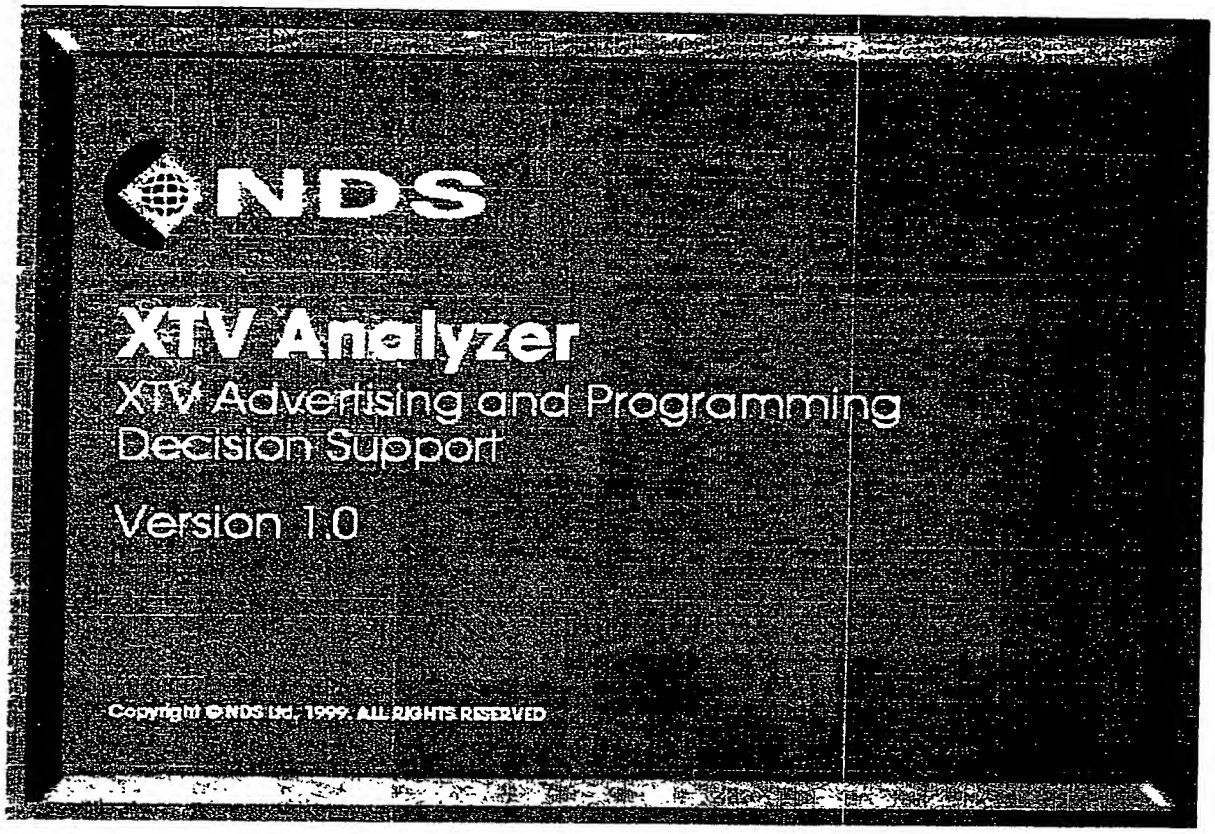
NDS

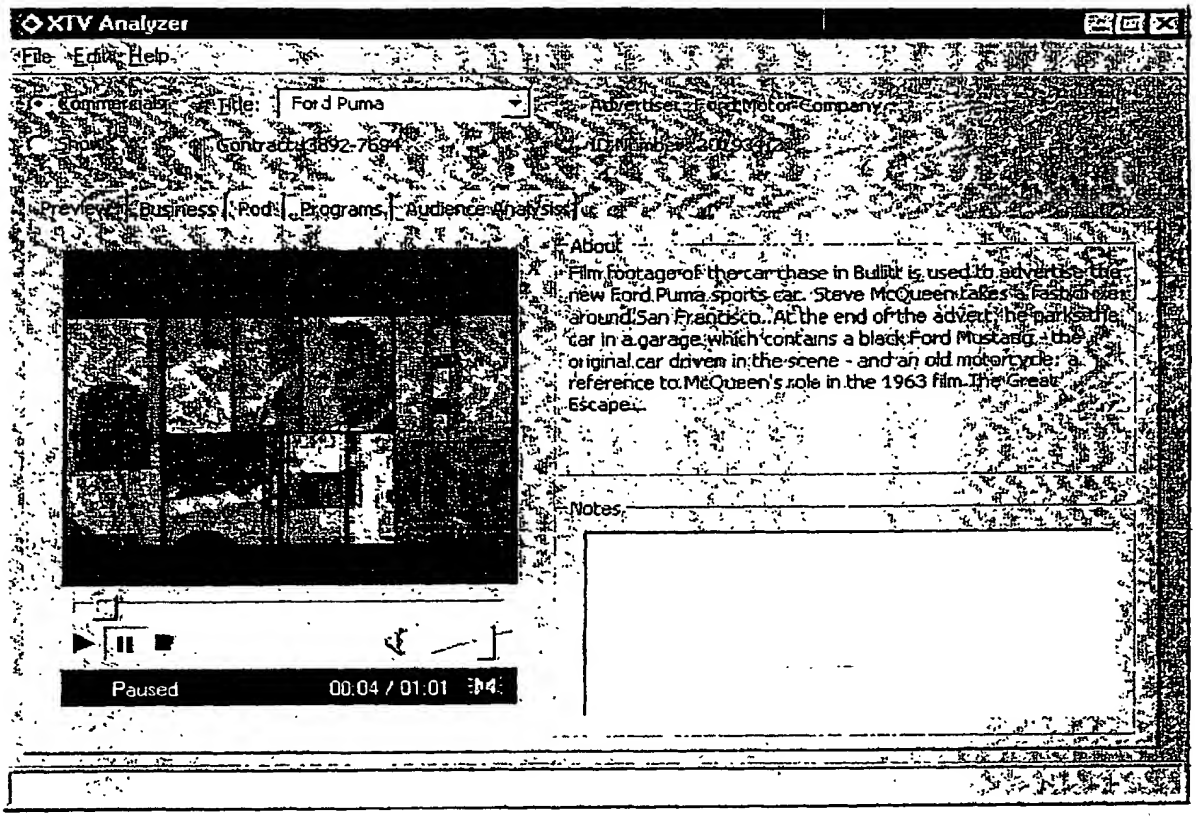
SECTION 15.

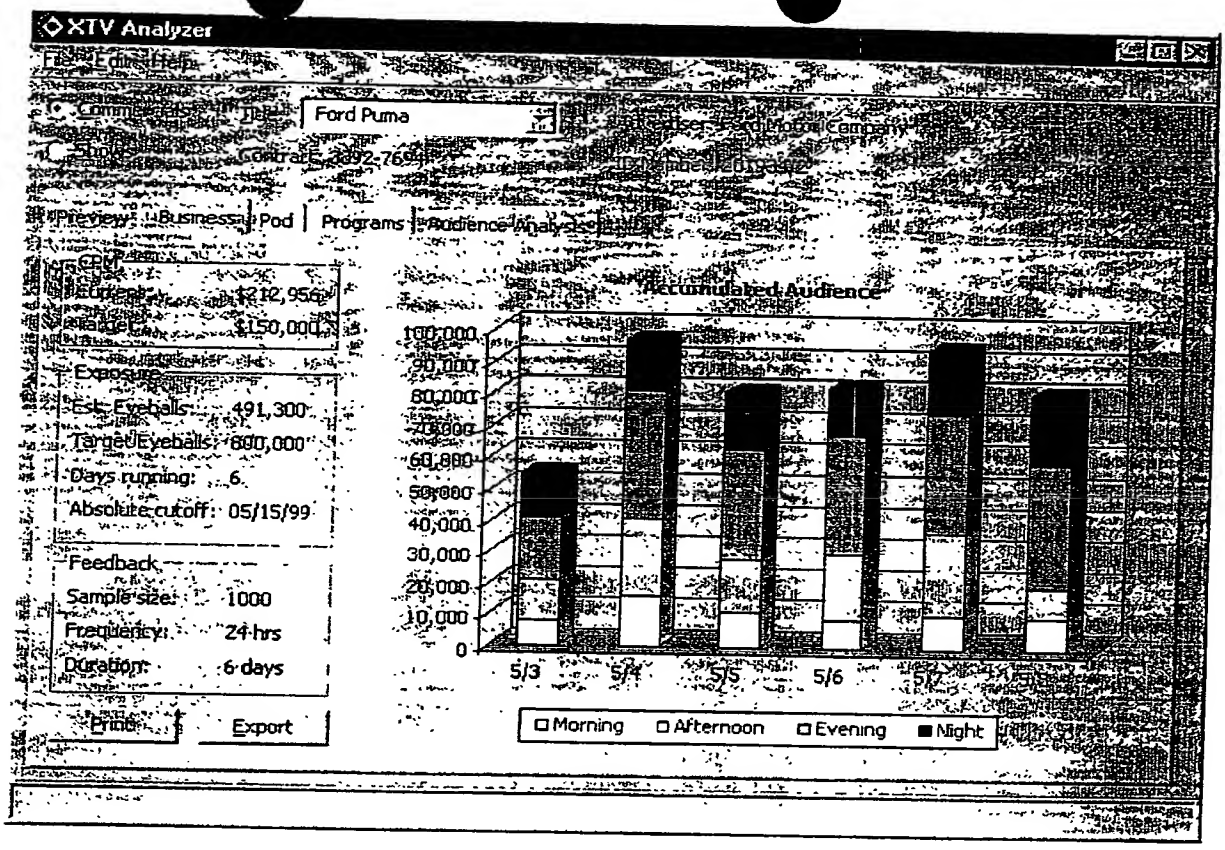
SECTION 15.

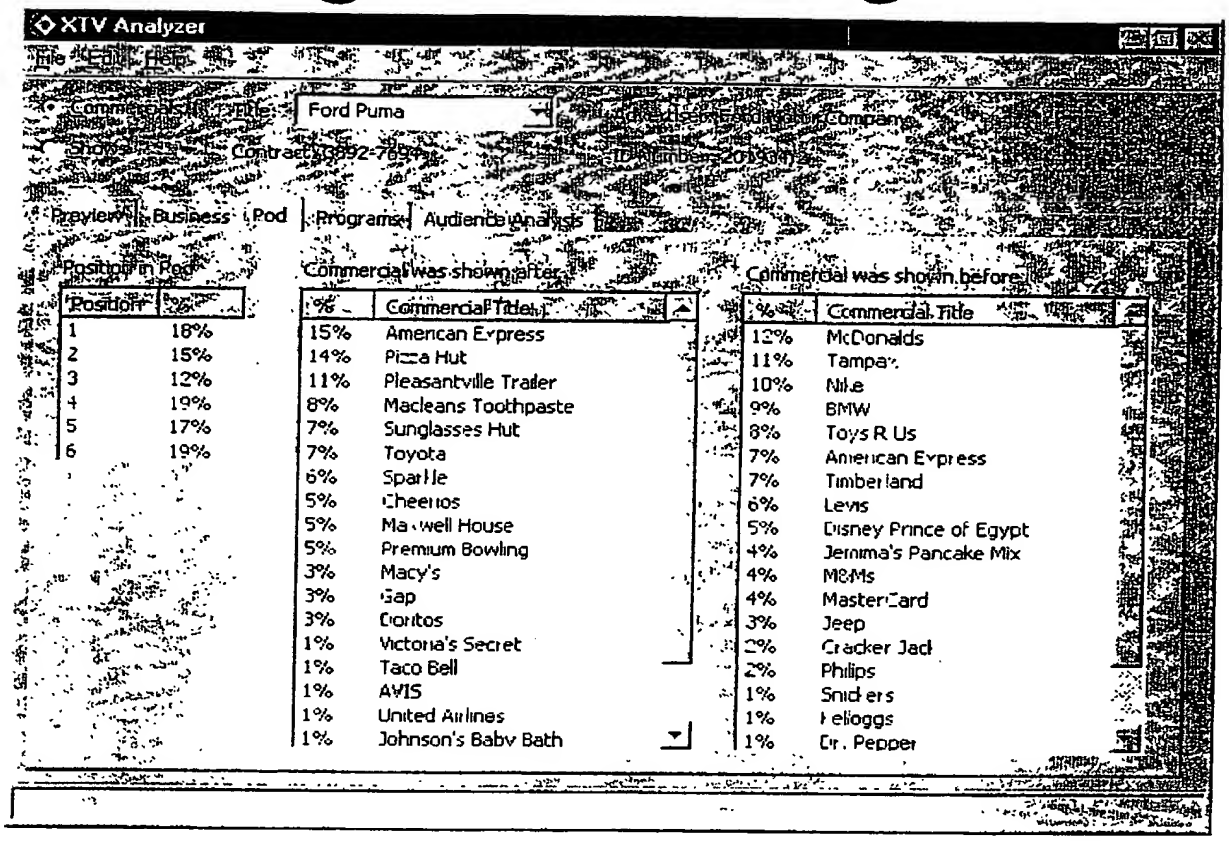
XTV Analyzer Screenshots

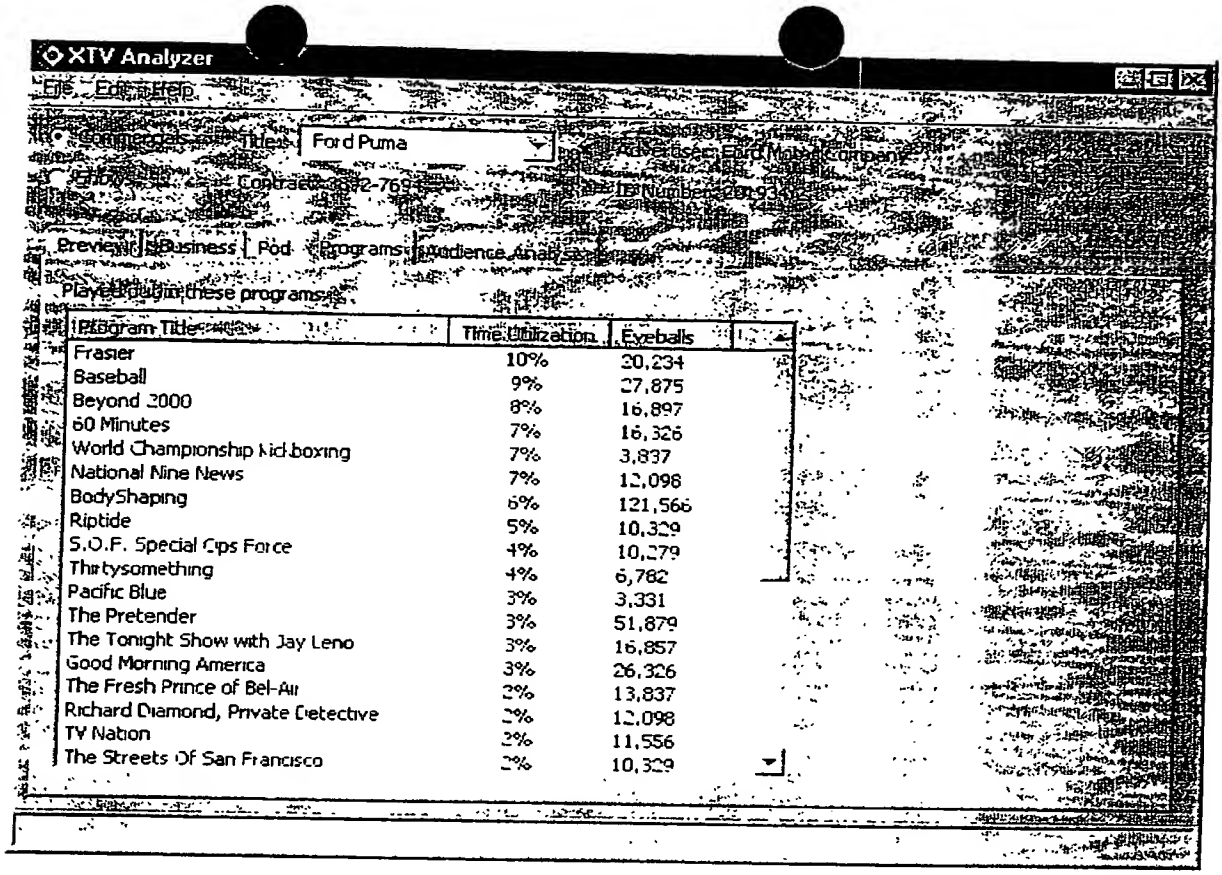
This document is available from the GUI & DEMOS website.

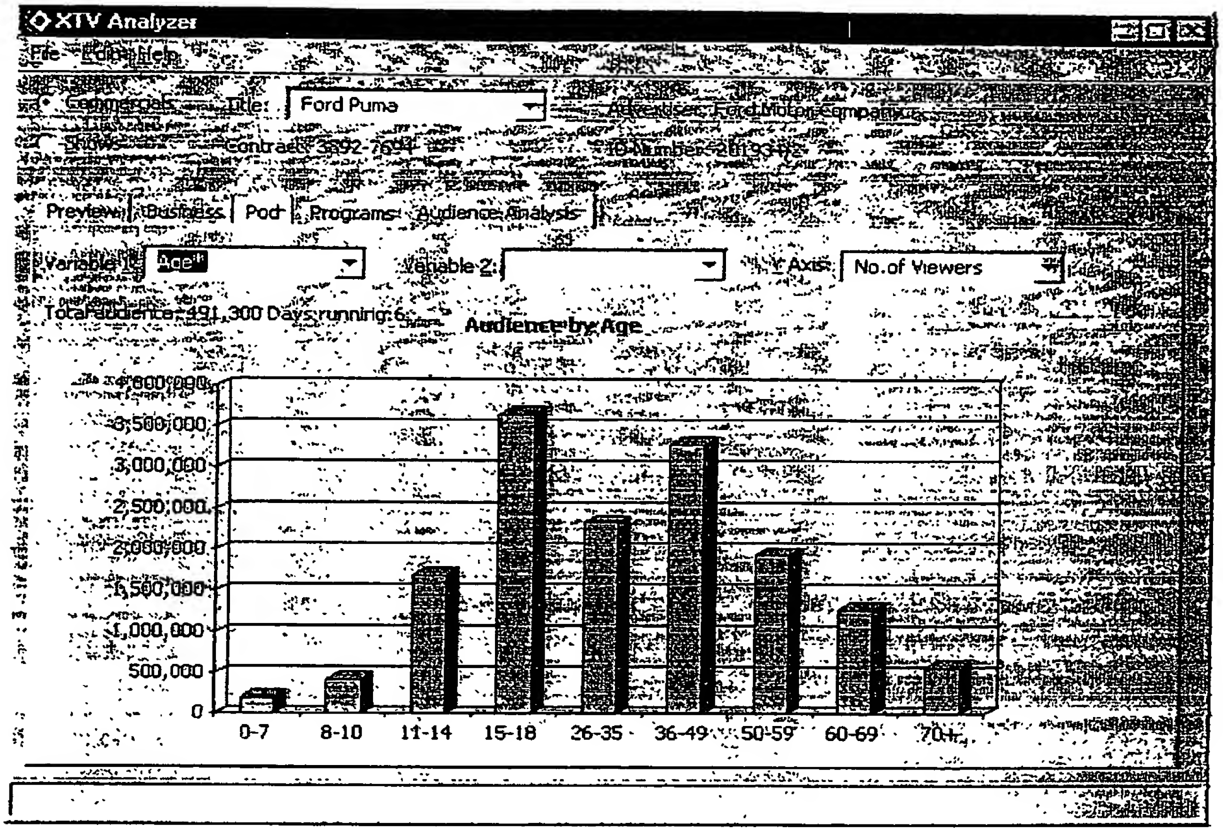


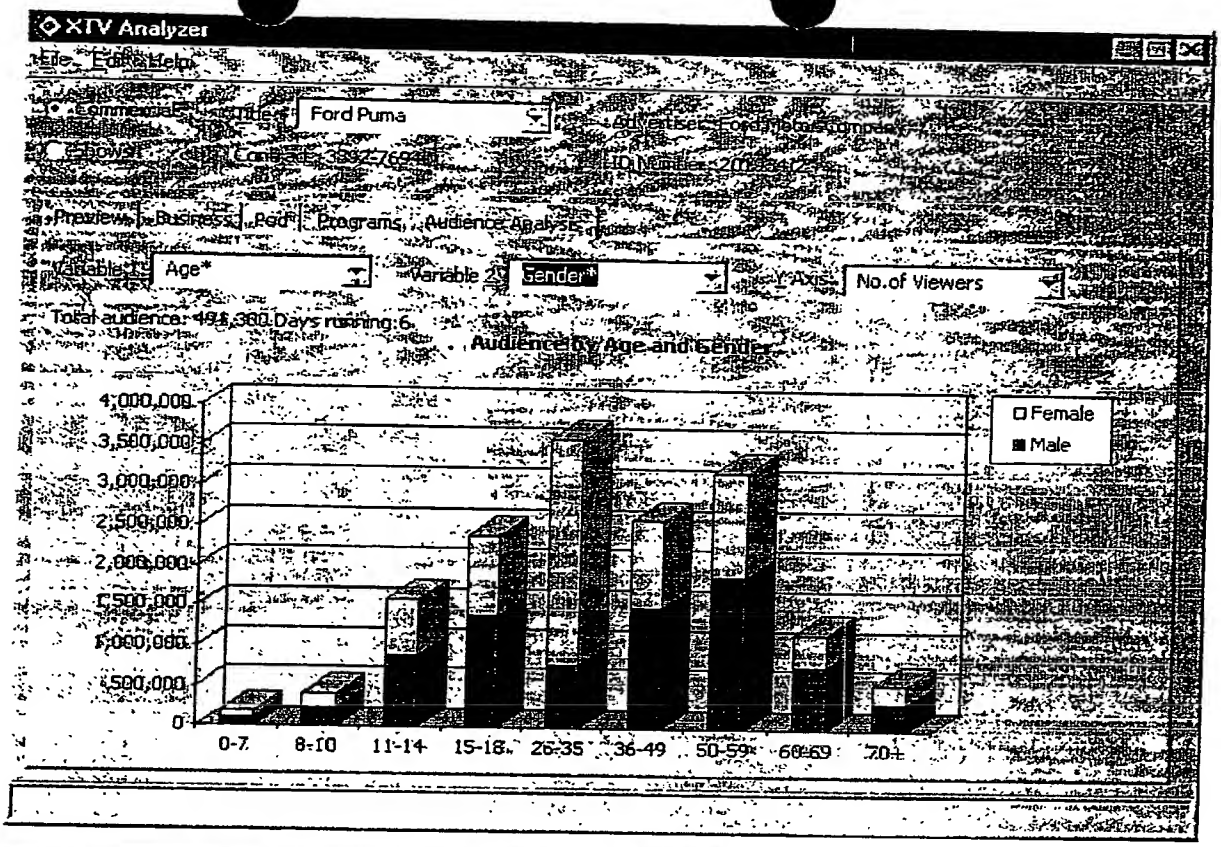


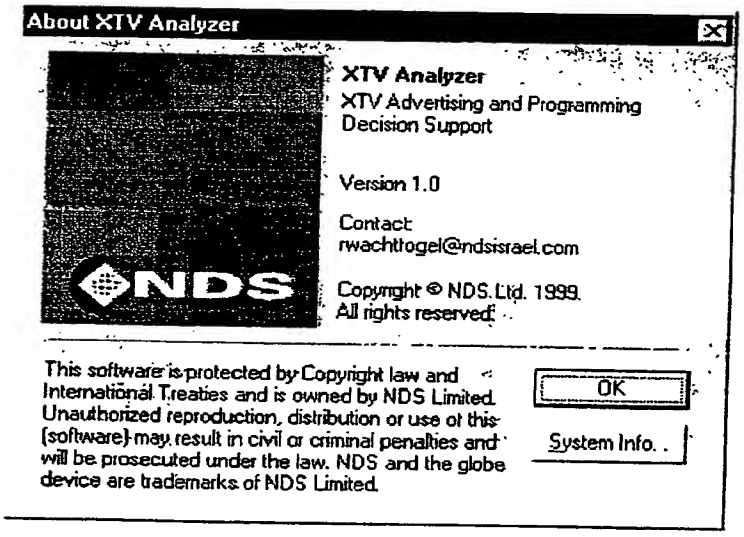

XTV Analyzer
File Edit Help
Ford Puma
Preview
Business
Pod
Programs
Audience Analysis
CPM
$12,950
$150,000
Exposure
Est. Eyeballs: 491,300
Target Eyeballs: 800,000
Days running: 6
Absolute cutoff: 05/15/99
Feedback
Sample size: 1000
Frequency: 24 hrs
Duration: 6 days
Print
Export
Accumulated Audience
100,000
90,000
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
5/3
5/4
5/5
5/6
5/7
Morning
Afternoon
Evening
Night


XTV Analyzer
File Edit Help
Commercial Title:
Ford Puma
Show:
Contract:
Preview
Business Pod
Programs
Audience Analysis
Position in Pod
Position
1
2
3
4
5
6
Commercial was shown after
%
Commercial Title
15% American Express
14% Pizza Hut
11% Pleasantville Trailer
8% Macleans Toothpaste
7% Sunglasses Hut
7% Toyota
6% Sparkle
5% Cheerios
5% Maxwell House
5% Premium Bowling
3% Macy's
3% Gap
3% Doritos
1% Victoria's Secret
1% Taco Bell
1% AVIS
1% United Airlines
1% Johnson's Baby Bath
Commercial was shown before
%
Commercial Title
12% McDonalds
11% Tampax
10% Nike
9% BMW
8% Toys R Us
7% American Express
7% Timberland
6% Levis
5% Disney Prince of Egypt
4% Jemima's Pancake Mix
4% M&Ms
4% MasterCard
3% Jeep
2% Cracker Jack
2% Philips
1% Snickers
1% Kelloggs
1% Dr. Pepper






XTV Analyzer
File Edit Help
Ford Puma
Preview
Business
Programs
Audience Analysis
Variable 1
Age*
Variable 2
Gender*
Y Axis
No.of Viewers
Total audience: 495,360 Days running: 6
Audience by Age and Gender
4,000,000
3,500,000
3,000,000
2,500,000
2,000,000
1,500,000
1,000,000
500,000
0
0-7
8-10
11-14
15-18
26-35
36-49
50-59
60-69
70+
Female
Male


About XTV Analyzer
XTV Analyzer
XTV Advertising and Programming Decision Support
Version 1.0
Contact
rwachtfogel@ndsisrael.com
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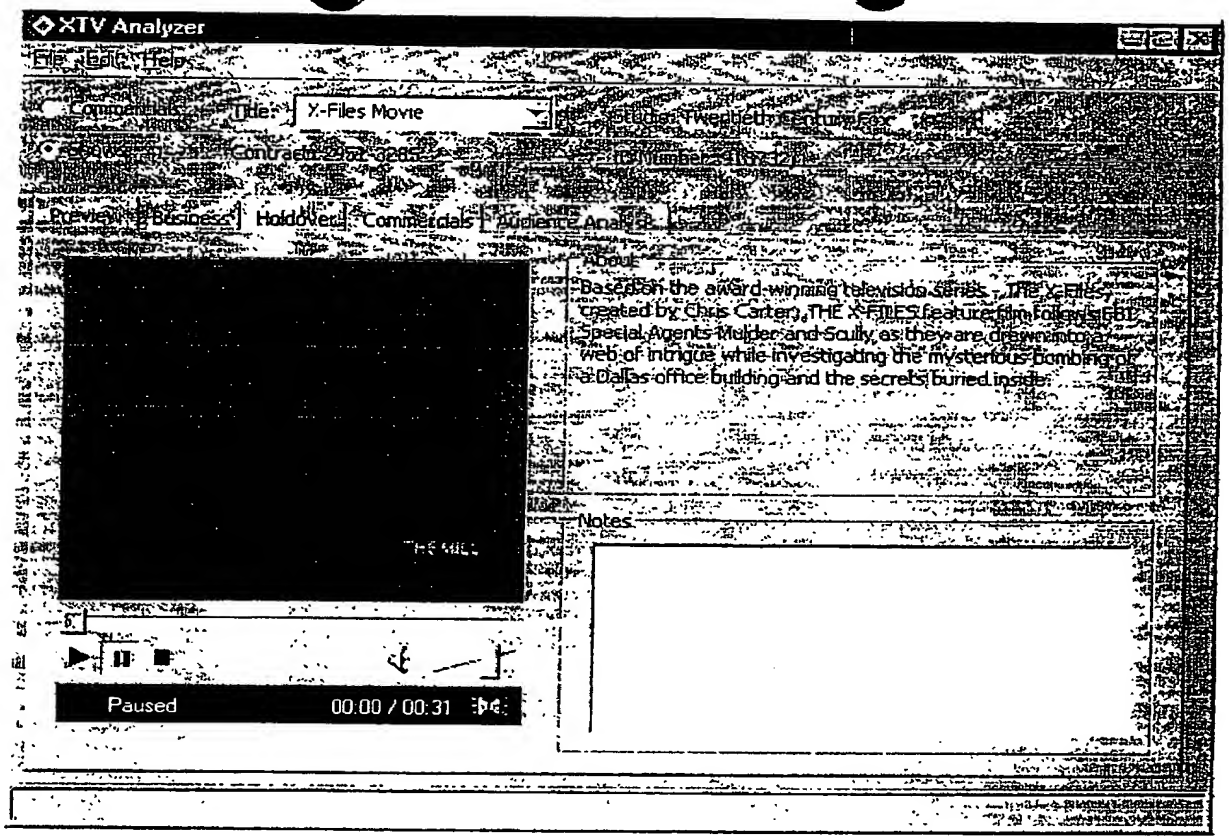
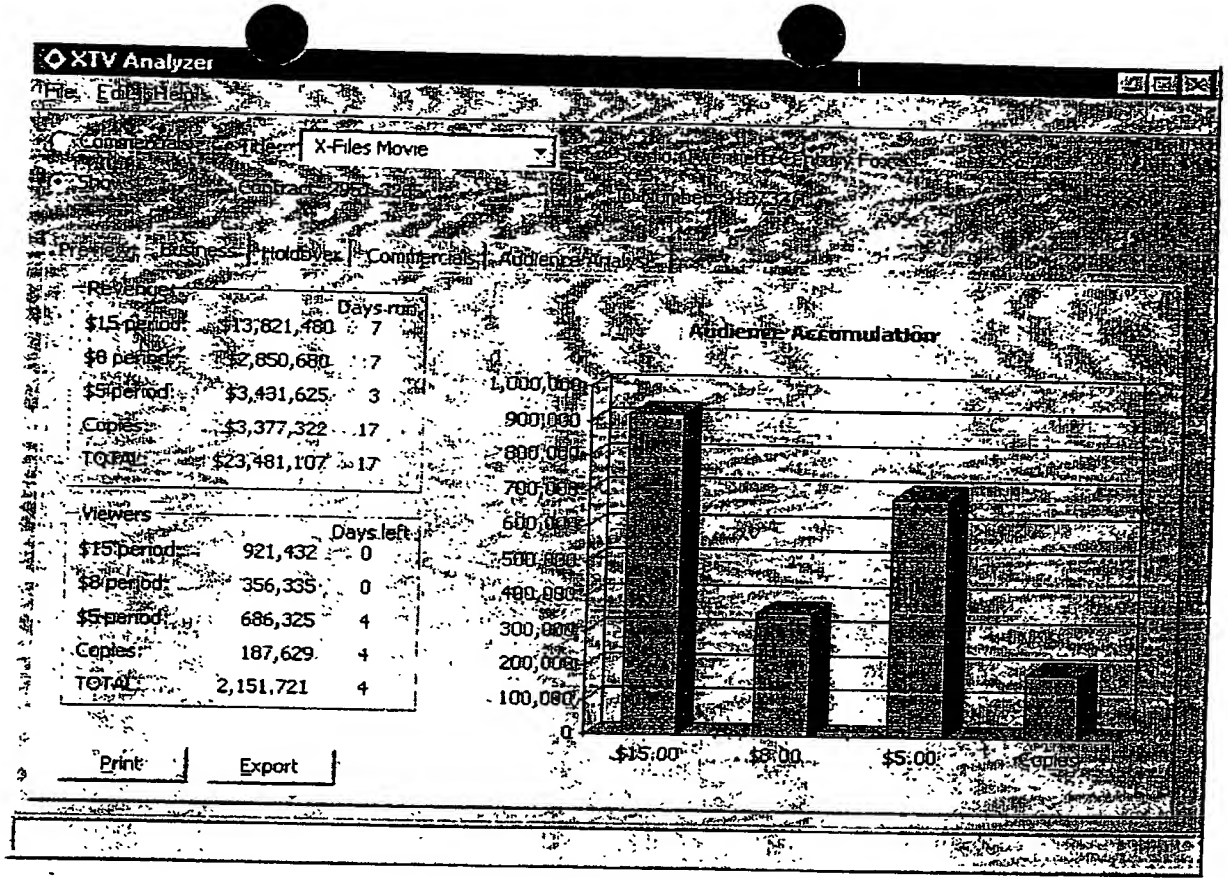
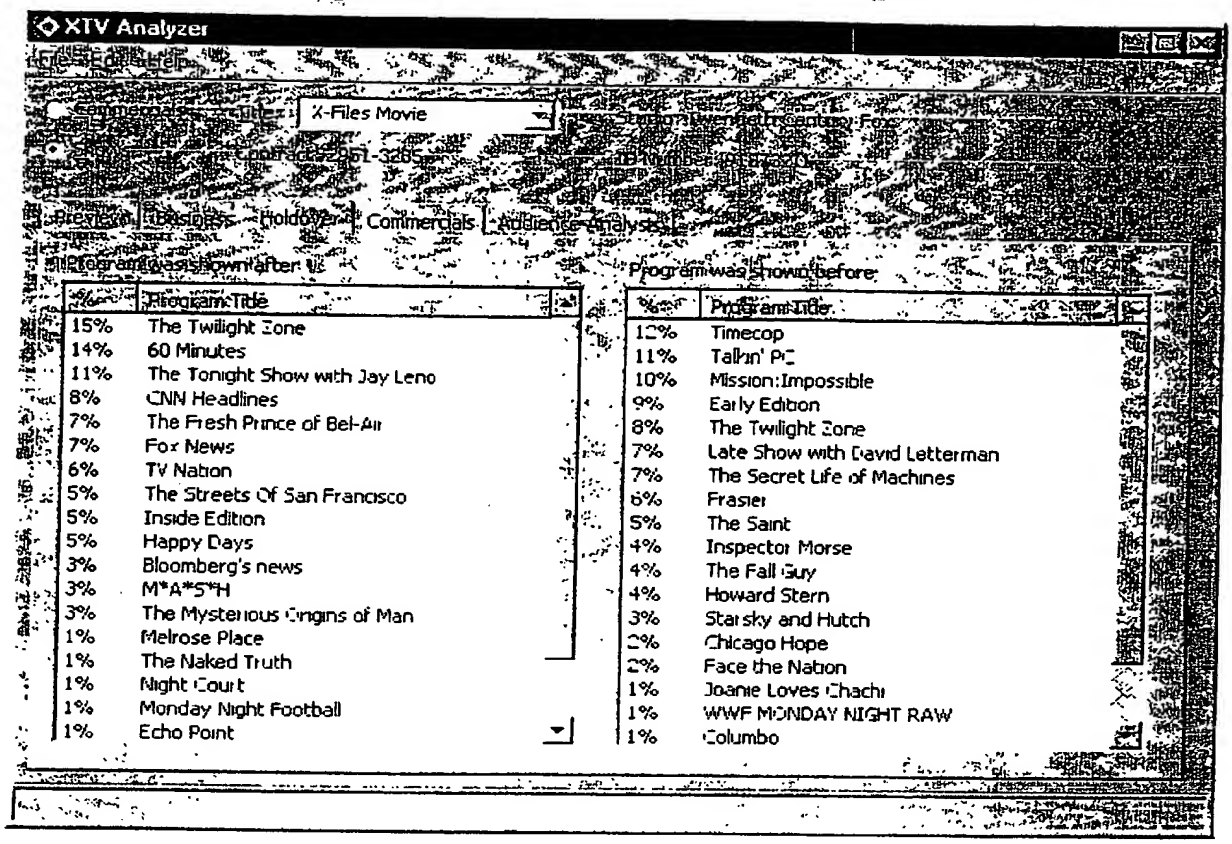
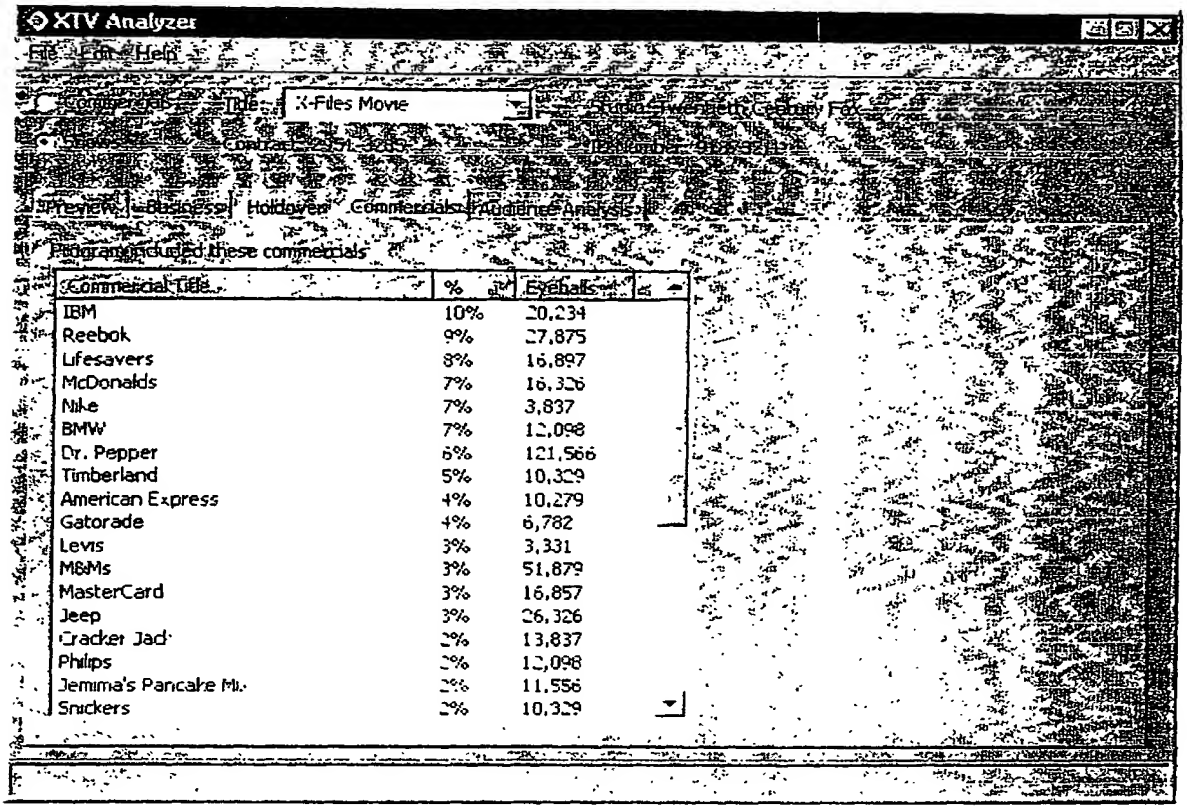
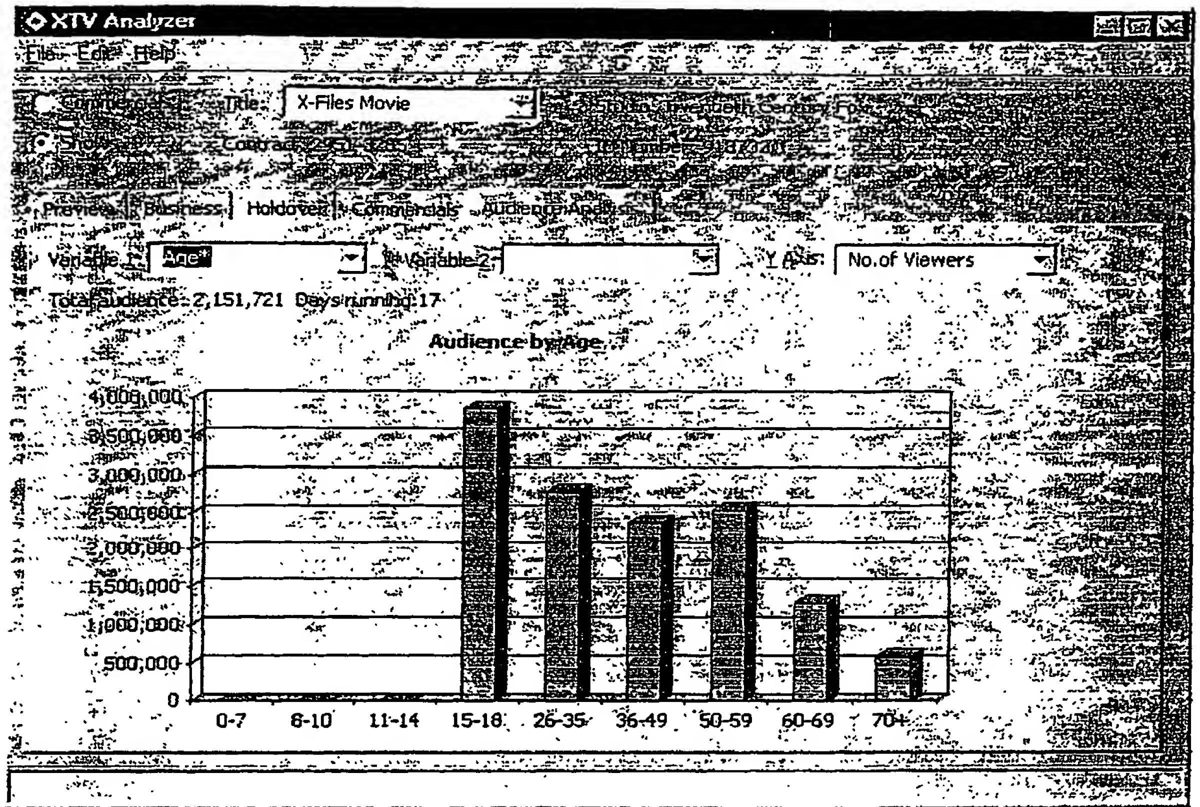
OK
System Info...


XTV Analyzer
File Edit Help
Title: X-Files Movie
Preview Business HoldOver Commercials Audience Analysis
About
Based on the award-winning television series, THE X-FILES, created by Chris Carter, THE X-FILES feature film follows FBI Special Agents Mulder and Scully as they are drawn into a web of intrigue while investigating the mysterious bombing of a Dallas office building and the secrets buried inside.
Notes
Paused
00:00 / 00:31

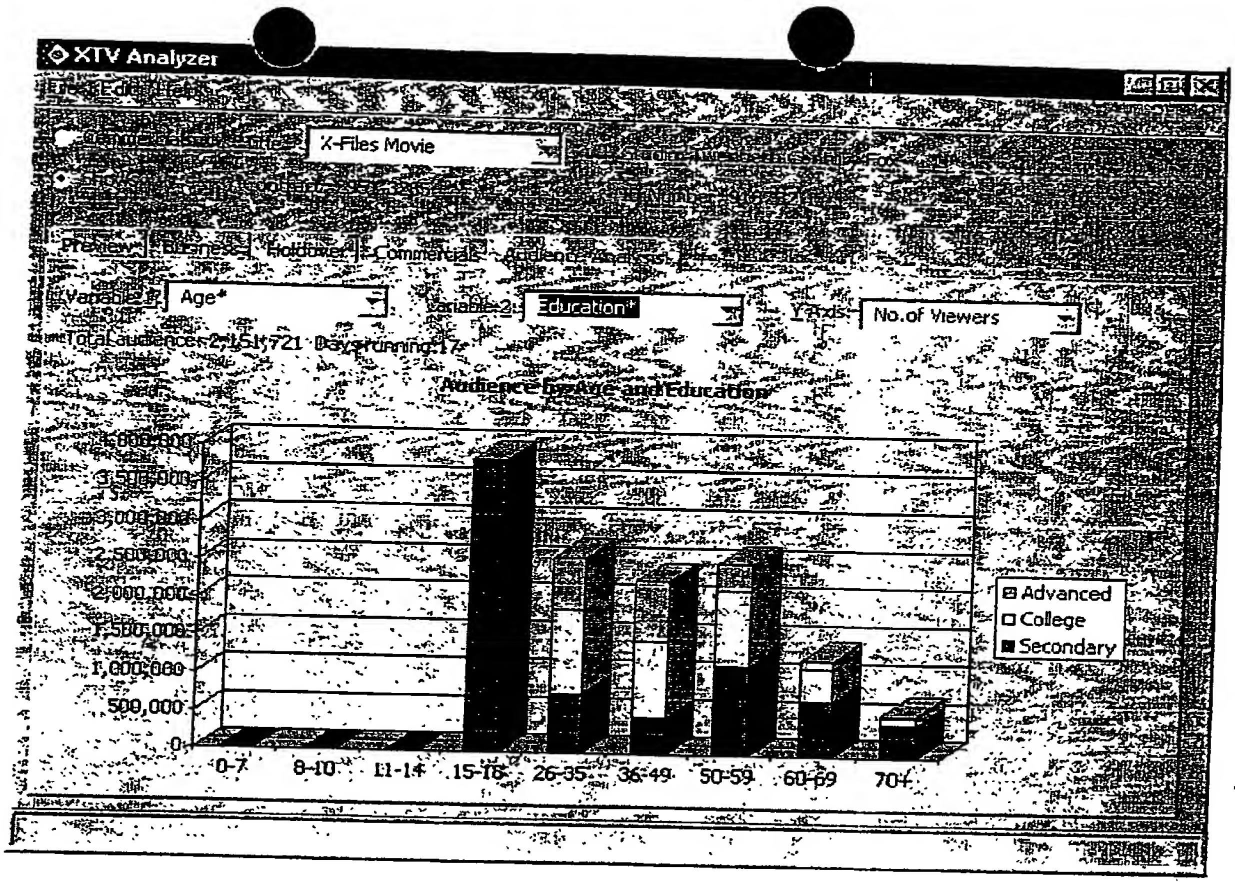

XTV Analyzer
File Edit Help
X-Files Movie
Revenues
Days run
$15 period: $13,821,480 7
$8 period: $2,850,680 7
$5 period: $3,431,625 3
Copies: $3,377,322 17
TOTAL: $23,481,107 17
Viewers
Days left
$15 period: 921,432 0
$8 period: 356,335 0
$5 period: 686,325 4
Copies: 187,629 4
TOTAL: 2,151,721 4
Print
Export
Audience Accumulation
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
$15.00
$8.00
$5.00
Copies




XTV Analyzer
File Edit Help
Commercials Title X-Files Movie
Preview Business Holidays Commercials Audience Analysis
Programs aired these commercials
Commercial Title
%
Eyeballs
IBM 10% 20,234
Reebok 9% 27,875
Lifesavers 8% 16,897
McDonalds 7% 16,326
Nike 7% 3,837
BMW 7% 12,098
Dr. Pepper 6% 121,566
Timberland 5% 10,329
American Express 4% 10,279
Gatorade 4% 6,782
Levis 3% 3,331
M&Ms 3% 51,879
MasterCard 3% 16,857
Jeep 3% 26,326
Cracker Jad 2% 13,837
Philips 2% 12,098
Jemima's Pancake Mi. 2% 11,556
Snickers 2% 10,329



09714255 .021405



XTV Analyzer Screenshots 13 of 13 Jonathan Maissel

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